

Work Order No.: 11D0874

April 30, 2011

Environmental Restoration 16660 South Canal Street South Holland, IL 60437-

Re: Markham, IL

Dear Toby Viehweg:

Microbac Laboratories, Inc. - Chicagoland Division received 34 sample(s) on 4/21/2011 2:45:00PM for the analyses presented in the following report as Work Order 11D0874.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Jeff Loewe, Division Manager at jeff.loewe@microbac.com. You may also contact Sean Hyde, Chief Operating Officer at sean.hyde@microbac.com or James Nokes, President at james.nokes@microbac.com.

H. Falmer

Sincerely,

Kevin Falvey Account Manager



Date:

## **WORK ORDER SAMPLE SUMMARY**

Client: Environmental Restoration

**Project:** Markham, IL **Lab Order:** 11D0874

Lab Older. 110007	<u> </u>			
Lab Sample ID	Client Sample ID	Tag Number	<b>Collection Date</b>	Date Received
11D0874-01	MDC-YD		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-02	MDC-YD		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-03	MDC FF2 5		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-04	MDC-FF2 5		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-05	MDC FF2 10		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-06	MDC-FF2 10		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-07	MDC FF2 15		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-08	MDC-FF2 15		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-09	MDC FF2 20		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-10	MDC-FF2 20		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-11	MDC FF1 5		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-12	MDC-FF1 5		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-13	MDC FF1 10		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-14	MDC-FF1 10		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-15	MDC FF1 15		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-16	MDC-FF1 15		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-17	MDC FF1 20		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-18	MDC-FF1 20		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-19	MDC EMC 5		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-20	MDC-EMC 5		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-21	MDC EMC 10		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-22	MDC-EMC 10		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-23	MDC EMC 15		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-24	MDC-EMC 15		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-25	MDC-EMC 20		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-26	MDC-EMC 20		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-27	MDC-901 5		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-28	MDC-901 5		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-29	MDC-901 10		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-30	MDC-901 10		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-31	MDC-901 15		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-32	MDC-901 15		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-33	MDC-901 20		04/20/2011 11:00	4/21/2011 2:45:00PM
11D0874-34	MDC-901 20		04/20/2011 11:00	4/21/2011 2:45:00PM

Saturday, April 30, 2011



CASE NARRATIVE Date: Saturday, April 30, 2011

Client: Environmental Restoration

**Project:** Markham, IL **Lab Order:** 11D0874

B - the Method Blank associated with the samples contained Chromium and Lead at a level above the reporting limit. This is considered insignificant, as the concentration in the samples was more than ten-times that measured in the blank.

The Matrix Spike and Matrix Spike Duplicate performed on the MDC-YD sample failed the accuracy criteria for, both, soluble and insoluble forms of Hexavalent Chromium. This bias is due to the high indigenous analyte concentration (relative to the spike amount).



Client: Environmental Restoration

Client Project: Markham, IL

Chromium, Hexavalent

Client Sample ID: MDC-YD Work Order/ID: 11D0874-01

Sample Description: Sampled: 04/20/2011 11:00

Matrix: Solid Received: 04/21/2011 14:45

Analyses	АТ	Result	RL	Qual	Units	DF	Analyzed		
		Method: SW-846	6010B			An	alyst: <b>SA</b>		
Total Metals by ICP Prep Method: SW846 3050B Prep Date/Time: 04/25/2011 10:55									
Chromium	A	9000	1.	4 B	mg/Kg	10	04/27/2011 21:36		
Lead	A	34000	3	.5 B	mg/Kg	10	04/27/2011 21:36		
Method: SW-846 7196A Analyst: GOEHL									
Hexavalent Chromium Prep Method: SW846 3060A						Prep Date/	Time: 04/28/2011 15:39		

80

В

mg/Kg

200

04/29/2011 15:07

A **2800** 



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-YD
 Work Order/ID:
 11D0874-02

 Sample Description:
 Sampled:
 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed	
		Method: 1311/6010B							
TCLP Metals by ICP			rep Method:/SW846 30	)10A		Prep Date/Time: 04/25/2011 09:07			
	Chromium	Α	1.19	0.00300			1	04/25/2011 14:15	
	Lead	Α	7.00	0.00750			1	04/25/2011 14:15	



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC FF2 5
 Work Order/ID:
 11D0874-03

Sample Description: Sampled: 04/20/2011 11:00

Α	nalyses	ΑT	Result	RL	Qua	l Units	DF	Analyzed
			An	alyst: <b>SA</b>				
Total Metals by ICP Prep Method: SW84			rep Method: SW846 30	50B			Prep Date/	Time: 04/25/2011 10:55
	Chromium	Α	8600	1	.5 B	mg/Kg	10	04/27/2011 21:52
	Lead	Α	35000	3	.8 B	mg/Kg	10	04/27/2011 21:52



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-FF2 5
 Work Order/ID:
 11D0874-04

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed			
		Method: 1311/6010B						Analyst: <b>SA</b>			
TCLP Metals by ICP			Prep Method:/SW846 3	010A		Prep Date/Time: 04/25/2011 10:11					
	Chromium	Α	5.28	0.00300			1	04/27/2011 18:59			
	Lead	Α	24.8	0.00750			1	04/27/2011 18:59			



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC FF2 10
 Work Order/ID:
 11D0874-05

Sample Description: Sampled: 04/20/2011 11:00

 Matrix:
 Solid
 Received:
 04/21/2011
 14:45

Aı	nalyses	ΑT	Result	RL	Qu	al Units	DF	Analyzed			
		Method: SW-846 6010B						Analyst: <b>SA</b>			
To	tal Metals by ICP	Prep Method: SW846 3050B					Prep Date/Time: 04/25/2011 10:55				
	Chromium	Α	8400		1.5 B	mg/Kg	10	04/27/2011 21:57			
	Lead	Α	34000	;	3.7 B	mg/Kg	10	04/27/2011 21:57			



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-FF2 10
 Work Order/ID:
 11D0874-06

 Sample Description:
 Sampled:
 04/20/2011 11:00

Α	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed
		Analyst: <b>SA</b>						
TCLP Metals by ICP Prep Method: /SW846 3010			010A		P	ep Date/	Time: 04/25/2011 10:11	
	Chromium	Α	2.90	0.00300			1	04/27/2011 19:15
	Lead	Α	16.5	0.00750			1	04/27/2011 19:15



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC FF2 15
 Work Order/ID:
 11D0874-07

Sample Description: Sampled: 04/20/2011 11:00

Α	nalyses	ΑT	Result	RL	Qua	al Units	DF	Analyzed
	Method: <b>SW-846 6010B</b>							alyst: <b>SA</b>
Total Metals by ICP Prep Me			rep Method: SW846 30	50B			Prep Date/	Time: 04/25/2011 10:55
	Chromium	Α	7300	1	.5 B	mg/Kg	10	04/27/2011 22:03
	Lead	Α	30000	3	8.6 B	mg/Kg	10	04/27/2011 22:03



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-FF2 15
 Work Order/ID:
 11D0874-08

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed			
		Method: 1311/6010B						Analyst: <b>SA</b>			
TCLP Metals by ICP			rep Method:/SW846 30	010A		Prep Date/Time: 04/25/2011 10:1					
	Chromium	Α	2.42	0.00300			1	04/27/2011 19:21			
	Lead	Α	0.0813	0.00750			1	04/27/2011 19:21			



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC FF2 20
 Work Order/ID:
 11D0874-09

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qua	l Units	DF	Analyzed
		Method: SW-846 6010B						alyst: <b>SA</b>
Total Metals by ICP Prep Method: SW846 3050			50B			Prep Date/	Time: 04/25/2011 10:55	
	Chromium	Α	6300	1	.4 B	mg/Kg	10	04/27/2011 22:08
	Lead	Α	25000	3	3.6 B	mg/Kg	10	04/27/2011 22:08



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-FF2 20
 Work Order/ID:
 11D0874-10

 Sample Description:
 Sampled:
 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed			
		Method: 1311/6010B						Analyst: <b>SA</b>			
TCLP Metals by ICP			rep Method:/SW846 3	010A		Prep Date/Time: 04/25/2011 10:11					
	Chromium	Α	36.3	0.00300			1	04/27/2011 19:26			
	Lead	Α	ND	0.00750			1	04/27/2011 19:26			



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC FF1 5
 Work Order/ID:
 11D0874-11

Sample Description: Sampled: 04/20/2011 11:00

Aı	nalyses	ΑT	Result	RL	C	<b>Qual</b>	Units	DF	Analyzed		
		Method: SW-846 6010B						Analyst: <b>SA</b>			
To	otal Metals by ICP	Prep Method: SW846 3050B				Prep Date/Time: 04/25/2011 10:55					
	Chromium	Α	6100		1.4	В	mg/Kg	10	04/27/2011 22:14		
	Lead	Α	24000	;	3.6	В	mg/Kg	10	04/27/2011 22:14		



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-FF1 5
 Work Order/ID:
 11D0874-12

 Sample Description:
 Sampled:
 04/20/2011 11:00

Α	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed			
	Method: 1311/6010B						Analyst: <b>SA</b>				
TCLP Metals by ICP		Р	rep Method:/SW846 3	010A	Prep Date/Time: 04/25/2011 10:1						
	Chromium	Α	6.50	0.00300			1	04/27/2011 19:32			
	Lead	Α	4.34	0.00750			1	04/27/2011 19:32			



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC FF1 10
 Work Order/ID:
 11D0874-13

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Q	ual	Units	DF	Analyzed
	Method: <b>SW-846 6010B</b>							Ar	nalyst: SA
To	otal Metals by ICP	Prep Method: SW846 3050B					Prep Date/Time: 04/25/2011 10:55		
	Chromium	Α	6800	•	1.5	В	mg/Kg	10	04/27/2011 22:19
	Lead	Α	28000	;	3.7	В	mg/Kg	10	04/27/2011 22:19



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-FF1 10
 Work Order/ID:
 11D0874-14

 Sample Description:
 Sampled:
 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed			
	Method: 1311/6010B						Analyst: <b>SA</b>				
TCLP Metals by ICP		Prep Method:/SW846 3010A				Prep Date/Time: 04/25/2011 10:11					
	Chromium	Α	6.34	0.00300			1	04/27/2011 19:37			
	Lead	Α	2.33	0.00750			1	04/27/2011 19:37			



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC FF1 15
 Work Order/ID:
 11D0874-15

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qua	Units	DF	Analyzed
	Method: <b>SW-846 6010B</b>						An	alyst: <b>SA</b>
Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 04/25/2011 10:55		
	Chromium	Α	8000	1	.5 B	mg/Kg	10	04/27/2011 22:46
	Lead	Α	33000	3	.8 B	mg/Kg	10	04/27/2011 22:46



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-FF1 15
 Work Order/ID:
 11D0874-16

Sample Description: Sampled: 04/20/2011 11:00

Α	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed
	Method: 1311/6010B						An	alyst: <b>SA</b>
TCLP Metals by ICP		Р	rep Method:/SW846 30	010A	Prep Date/Time: 04/25/2011 10:			
	Chromium	Α	9.20	0.00300			1	04/27/2011 19:43
	Lead	Α	0.130	0.00750			1	04/27/2011 19:43



Client: Environmental Restoration

Client Project: Markham, IL

Client Sample ID: MDC FF1 20 Work Order/ID: 11D0874-17

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qua	l Units	DF	Analyzed	
	Method: SW-846 6010B						An	alyst: <b>SA</b>	
Total Metals by ICP		Prep Method: SW846 3050B					Prep Date/Time: 04/25/2011 10:55		
	Chromium	Α	6400	1	.5 B	mg/Kg	10	04/27/2011 22:52	
	Lead	Α	26000	3	.7 B	mg/Kg	10	04/27/2011 22:52	



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-FF1 20
 Work Order/ID:
 11D0874-18

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed		
Method: 1311/6010B						Analyst: <b>SA</b>				
TCLP Metals by ICP		Prep Method:/SW846 3010A				Prep Date/Time: 04/25/2011 10:11				
	Chromium	Α	9.68	0.00300			1	04/27/2011 20:10		
	Lead	Α	0.0419	0.00750			1	04/27/2011 20:10		



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC EMC 5
 Work Order/ID:
 11D0874-19

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qı	ual Unit	s DF	Analyzed	
Method: <b>SW-846 6010B</b>						Α	nalyst: <b>SA</b>		
To	otal Metals by ICP	Prep Method: SW846 3050B					Prep Date/Time: 04/25/2011 10:55		
	Chromium	Α	7100	1	1.3	3 mg/Kg	10	04/27/2011 22:57	
	Lead	А	28000	3	3.3	3 mg/Kg	10	04/27/2011 22:57	



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-EMC 5
 Work Order/ID:
 11D0874-20

 Sample Description:
 Sampled:
 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed			
	Method: 1311/6010B						Analyst: <b>SA</b>				
TCLP Metals by ICP		Р	rep Method:/SW846 30	)10A	Prep Date/Time: 04/25/2011 10:11						
	Chromium	Α	1.66	0.00300			1	04/27/2011 20:15			
	Lead	Α	1.04	0.00750			1	04/27/2011 20:15			



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC EMC 10
 Work Order/ID:
 11D0874-21

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qua	l Units	DF	Analyzed
Method: <b>SW-846 6010B</b>							An	alyst: <b>SA</b>
Total Metals by ICP			rep Method: SW846 30	50B	Prep Date/Time: 04/25/2011 10:55			
	Chromium	Α	9100	1	.5 B	mg/Kg	10	04/27/2011 23:02
	Lead	Α	37000	3	.8 B	mg/Kg	10	04/27/2011 23:02



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-EMC 10
 Work Order/ID:
 11D0874-22

 Sample Description:
 Sampled:
 04/20/2011 11:00

Α	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed			
	Method: 1311/6010B						Analyst: <b>SA</b>				
TCLP Metals by ICP		Prep Method:/SW846 3010A				Prep Date/Time: 04/25/2011 10:11					
	Chromium	Α	7.30	0.00300			1	04/27/2011 20:20			
	Lead	Α	0.0200	0.00750			1	04/27/2011 20:20			



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC EMC 15
 Work Order/ID:
 11D0874-23

 Sample Description:
 Sampled:
 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed
Method: SW-846 6010B						An	alyst: <b>SA</b>	
Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 04/25/2011 10:55		
	Chromium	Α	6700	1	5 B	mg/Kg	10	04/27/2011 23:08
	Lead	Α	27000	3	8 B	mg/Kg	10	04/27/2011 23:08



Client: Environmental Restoration

Client Project: Markham, IL

Client Sample ID: MDC-EMC 15 Work Order/ID: 11D0874-24

 Sample Description:
 Sampled:
 04/20/2011 11:00

Α	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed		
		Method: 1311/6010B						Analyst: <b>SA</b>		
TCLP Metals by ICP		Р	rep Method:/SW846 30	010A	Prep Date/Time: 04/25/2011 10:11					
	Chromium	Α	14.5	0.00300			1	04/27/2011 20:26		
	Lead	Α	0.00900	0.00750			1	04/27/2011 20:26		



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-EMC 20
 Work Order/ID:
 11D0874-25

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qua	l Units	DF	Analyzed		
		Method: SW-846 6010B					Analyst: <b>SA</b>			
Total Metals by ICP		Р	rep Method: SW846 30	50B	Prep Date/Time: 04/25/2011 10:55					
	Chromium	Α	6400	1	.5 B	mg/Kg	10	04/27/2011 23:13		
	Lead	Α	26000	3	.7 B	mg/Kg	10	04/27/2011 23:13		



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-EMC 20
 Work Order/ID:
 11D0874-26

 Sample Description:
 Sampled:
 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed		
		Method: 1311/6010B					Analyst: <b>SA</b>			
TCLP Metals by ICP		Р	rep Method:/SW846 30	)10A	Prep Date/Time: 04/25/2011 10:11					
	Chromium	Α	17.5	0.00300			1	04/27/2011 20:31		
	Lead	Α	0.00500	0.00750			1	04/27/2011 20:31		



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-901 5

 Work Order/ID:
 11D0874-27

 Sample Description:
 Sampled:
 04/20/2011 11:00

Α	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed			
		Method: SW-846 6010B					Analyst: <b>SA</b>				
Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 04/25/2011 10:55					
	Chromium	Α	7600	1	3 B	mg/Kg	10	04/27/2011 23:18			
	Lead	Α	31000	3	3 B	mg/Kg	10	04/27/2011 23:18			



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-901 5
 Work Order/ID:
 11D0874-28

 Sample Description:
 Sampled:
 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed			
		Method: 1311/6010B						Analyst: <b>SA</b>			
TCLP Metals by ICP		Р	rep Method:/SW846 30	010A	Prep Date/Time: 04/25/2011 10:11						
	Chromium	Α	4.35	0.00300			1	04/27/2011 20:36			
	Lead	Α	1.72	0.00750			1	04/27/2011 20:36			



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-901 10
 Work Order/ID:
 11D0874-29

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qua	l Units	DF	Analyzed
		Method: SW-846 6010B					An	alyst: <b>SA</b>
Total Metals by ICP		Р	rep Method: SW846 30	50B	Prep Date/Time: 04/25/2011 10:55			
	Chromium	Α	7500	1	.4 B	mg/Kg	10	04/27/2011 23:24
	Lead	Α	30000	3	.5 B	mg/Kg	10	04/27/2011 23:24



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-901 10
 Work Order/ID:
 11D0874-30

 Sample Description:
 Sampled:
 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed			
		Method: 1311/6010B						Analyst: <b>SA</b>			
TCLP Metals by ICP		Р	rep Method:/SW846 30	010A	Prep Date/Time: 04/25/2011 10:11						
	Chromium	Α	3.14	0.00300			1	04/27/2011 20:42			
	Lead	Α	0.0624	0.00750			1	04/27/2011 20:42			



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-901 15
 Work Order/ID:
 11D0874-31

Sample Description: Sampled: 04/20/2011 11:00

An	alyses	ΑT	Result	RL	Qua	Units	DF	Analyzed	
	Method: SW-846 6010B						An	alyst: <b>SA</b>	
Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 04/25/2011 10:55			
	Chromium	Α	6700	1	.4 B	mg/Kg	10	04/27/2011 23:29	
	Lead	Α	28000	3	.6 B	mg/Kg	10	04/27/2011 23:29	



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-901 15
 Work Order/ID:
 11D0874-32

 Sample Description:
 Sampled:
 04/20/2011 11:00

Α	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed		
		Method: 1311/6010B					Analyst: <b>SA</b>			
TCLP Metals by ICP		Р	rep Method:/SW846 30	010A	Prep Date/Time: 04/25/2011 10:11					
	Chromium	Α	2.58	0.00300			1	04/27/2011 20:47		
	Lead	Α	0.00280	0.00750			1	04/27/2011 20:47		



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-901 20
 Work Order/ID:
 11D0874-33

 Sample Description:
 Sampled:
 04/20/2011 11:00

A	nalyses	AT	Result	RL	(	Qual	Units	DF	Analyzed		
		Method: SW-846 6010B					Analyst: <b>SA</b>				
Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 04/25/2011 10:55					
	Chromium	Α	6500		1.5	В	mg/Kg	10	04/27/2011 23:35		
	Lead	Α	26000		3.7	В	mg/Kg	10	04/27/2011 23:35		



Analytical Results Date: Saturday, April 30, 2011

Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-901 20
 Work Order/ID:
 11D0874-34

Sample Description: Sampled: 04/20/2011 11:00

Matrix: Solid Received: 04/21/2011 14:45

Analyses	AT	Result	RL	Qual	Units	DF	Analyzed	
		Method: 1311/60		Analyst: <b>SA</b>				
TCLP Metals by ICP	P	rep Method:/SW84	6 3010A		Р	rep Date/	Time: 04/25/2011 10:11	
Chromium	Α	2.16	0.00300			1	04/27/2011 20:52	
Lead	Α	0.00970	0.00750			1	04/27/2011 20:52	



#### FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

NA Not Analyzed

mg/L Milligrams per Liter (ppm) mg/Kg Milligrams per Kilogram (ppm)

U Undetected

J Analyte concentration detected between RL and MDL (Metals / Organics)

В Detected in the associated method Blank at a concentration above the routine PQL/RL

D Dilution performed on sample

ND Not Detected at the Reporting Limit (or the Method Detection Limit, if used)

Ε Value above quantitation range

Н Analyte was prepared and/or analyzed outside of the analytical method holding time

Matrix Interference

R RPD outside accepted recovery limits S Spike recovery outside recovery limits

Surrogate Surr DF Dilution Factor Reporting Limit RL MDL Method Detection Limit NR Not Recovered

#### **ANALYTE TYPES: (AT)**

A,B =Target Analyte Internal Standard М Summation Analyte

Surrogate

Tentatively Identified Compound (TIC, concentration estimated)

#### QC SAMPLE IDENTIFICATIONS

MBLK	=	Method Blank	ICSA	=	Interference Check Standard "A"
DUP	=	Method Duplicate	ICSAB	=	Interference Check Standard "AB"
LCS	=	Laboratory Control Sample	LCSD	=	Laboratory Control Sample Duplicate
BS	=	Method Blank Spike	BSD	=	Method Blank Spike Duplicate
MS	=	Matrix Spike	MSD	=	Matrix Spike Duplicate
ICB	=	Initial Calibration Blank	CCB	=	Continuing Calibration Blank
ICV	=	Initial Calibration Verification	CCV	=	Continuing Calibration Verification
PDS	=	Post Digestion Spike	SD	=	Serial Dilution
000		0 . 0	and the second		

OPR Ongoing Precision and Recovery Standard

#### CERTIFICATIONS

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

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The American Association for Laboratory Accreditation [A2LA] for Environmental Department of Defense Testing, ISO/IEC 17025 (Certificate# 3045.02)

Illinois EPA for the analysis wastewater and solid waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (accreditation #200064)

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Kentucky EPPC for the analysis of samples applicable to the Underground Storage Tank program (lab #75)

North Carolina DENR for the environmental analysis for NPDES effluent, surface water, groundwater, and pretreatment regulations(certificate #597)

Wisconsin DNR for the chemical analysis of wastewater and solid waste (lab #998036710)



Saturday, April 30, 2011

### **COOLER INSPECTION**

Client Name: Environme	ental Restoration	Date/Time Received: 04/21/2011 14:45							
Work Order Number:	11D0874		Received by	: Ken Smith					
Checklist completed by:	4/22/2011 9:14:00AM	Ken Smith	Reviewed by	y: <u>4/22/2011</u>	KGF				
		Carrier Name:	Microbac						
Co	ooler ID: Default Cooler		Container	Temp Blank Temp	perature: 5.00°C				
Custody seals intact on COC present? COC included sufficient COC included a sample COC agrees with sample COC identified the approach COC included date of coc COC included time of coc COC identified the approach in proper contact Samples in proper contact Sample containers intact Sufficient sample volume All samples received with	shipping container/cooler? sample containers?  client identification? sample collector informatio description? e labels? opriate matrix? ollection? ollection? opriate number of container siner/bottle? t? e for indicated test?	s? identified?	Yes       ✓         Yes       ✓	No	Not Present Not Present Not Present V				
COC included the reque COC signed when relind Samples received on ice Samples properly prese Voa vials for aqueous sa Cooler Comments:	uished and received? e?	ce?	Yes Yes Yes Yes Yes Yes Yes	No No No No No	No VOA vials submitted	<b>✓</b>			

 $ANY \ "NO" \ EVALUATION \ (excluding \ After-Hour \ Receipt) \ REQUIRES \ CLIENT \ NOTIFICATION.$ 



Sample ID	Client Sample ID	Comments
11D0874-01	MDC-YD	
11D0874-02	MDC-YD	
11D0874-03	MDC FF2 5	
11D0874-04	MDC-FF2 5	
11D0874-05	MDC FF2 10	
11D0874-06	MDC-FF2 10	
11D0874-07	MDC FF2 15	
11D0874-08	MDC-FF2 15	
11D0874-09	MDC FF2 20	
11D0874-10	MDC-FF2 20	
11D0874-11	MDC FF1 5	
11D0874-12	MDC-FF1 5	
11D0874-13	MDC FF1 10	
11D0874-14	MDC-FF1 10	
11D0874-15	MDC FF1 15	
11D0874-16	MDC-FF1 15	
11D0874-17	MDC FF1 20	
11D0874-18	MDC-FF1 20	
11D0874-19	MDC EMC 5	
11D0874-20	MDC-EMC 5	
11D0874-21	MDC EMC 10	
11D0874-22	MDC-EMC 10	
11D0874-23	MDC EMC 15	
11D0874-24	MDC-EMC 15	
11D0874-25	MDC-EMC 20	
11D0874-26	MDC-EMC 20	
11D0874-27	MDC-901 5	
11D0874-28	MDC-901 5	
11D0874-29	MDC-901 10	
11D0874-30	MDC-901 10	
11D0874-31	MDC-901 15	
11D0874-32	MDC-901 15	
11D0874-33	MDC-901 20	
11D0874-34	MDC-901 20	

of Custody	Pageof_APrepared by:	CoCode (lab use only)	Template/Prelogin Shipped Via:	Remarks/Containment Sample # (lab only)	03	05,06		0/20		91 (51		20,72	122	***************************************	Temp Other	Condition (lab use only)	nd Charled INCE	phi checked inch.
er/Preservative															Hd III		Courier Bottles Received:	Hine.
Analysis/Container/Preservative	bos) Losy Domontstro	of Chrome,  Aexa val	99 1721 49	X	义义	义人	X X	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	<b>ス</b> メ	X X	\ \ \ \ \	X	<b>(</b> )		<b>Leps</b>	Samples returned via:	Fed Ex Temp:	המוט.
	Selle, con	) No.	of Oortainers	Time O											DW - Drinking Water OT - Other	S		
	× V154W8	red: May 1C hawn Project Name: P.O. #: Date Results Needed	Email? N	Uate C-Sc I											WW - WasteWater DW	ved by- eggnature)	Repeived by: (Signature) Received for lab by: (Signature)	ied for tay by, torgrammy
	6 6 6 7 7 Report to: Email to: Chiral	Collected: SEPAP #: (Lab MUST Be Notified)	>	Matrix* Depth												Time: Recei		MC-ONE
	RESTORATIONLC 1666 Fabick Drive Fenton, MO 63026 (636) 227-7477 Fax (636) 227-6447	Client: $\mathcal{MSE}$ Site/Facility ID #:  Rush (Lab MI		Comp/Grab											GW - Groundwater	Date:	Date:	
TIL ER	DU874 Kevin Faivey R - South Holland	aription:  ne: 312446 6725 63680 3476 ected by: McH. W.C.	N 90 loe N 21/2011	MDC-YD	MDC FF25		MDC PC2 (5	Z t		MVC 777.5 MOL 777.13			MOC SMC10		*Matrix SS - Soil/Solid Remarks: ,	Religionarished by (Signature)	Remarked M. (Signature)  Religiously of Signature)  Religiously of Signature)	(

30 12 (lab use only) Sample # (lab only) 34 33, Condition (lab use only) ō N Chain of Custody Prepared by: 16 # 11 CE pH Checked NCF: Page 2 Remarks/Containment 4180 all Temp Other Template/Prelogin Shipped Via: CoCode UPS Bottles Received: Flow Hd Time: Analysis/Container/Preservative Courier Samples returned via: Fed Ex Temp: Date: 2 J OT - Other Containers So. ō t, Vitting Delleicon DW - Drinking Water Yes XYes Time May E ham 0011 してなながら Date Results Needed: S N 2 Received for lab by. (Signature) Project Name: するが Date Email? P.O. #: Fax? WW - WasteWater Alternate billing information: 200 City/State Collected: Depth Report to: 🧪 (Lab MUST Be Notified) Same Day Next Day Time: Email to: Two Day Matrix\* 40350 1666 Fabick Drive Fenton, MO 63026 (636) 227-7477 Fax (636) 227-6447 Date: GW - Groundwater 4 . H. !! ENVIRONMENTAL RESTORATION LO Comp/Grab Site/Facility ID #: Client: Rush SS - Soil/Solid 6366000 JUD が开びが 8 Phone: 3124466325 Reliequished by: (Signature) MDC golds MDC 4015 MOC GOLLD Collected by (signature): MDC GOLS z Sample ID Collected by: Packed on Ice Remarks: \*Matrix Description: Fax:

Work Order No.: 11D0912

April 30, 2011

Environmental Restoration 16660 South Canal Street South Holland, IL 60437-

Re: Markham Dump

Dear Toby Viehweg:

Microbac Laboratories, Inc. - Chicagoland Division received 2 sample(s) on 4/22/2011 1:40:00PM for the analyses presented in the following report as Work Order 11D0912.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Jeff Loewe, Division Manager at jeff.loewe@microbac.com. You may also contact Sean Hyde, Chief Operating Officer at sean.hyde@microbac.com or James Nokes, President at james.nokes@microbac.com.

Sincerely,

DRAFT REPORT
DATA SUBJECT TO CHANGE



Date:

# Partial 4/30/2011

Saturday, April 30, 2011

## **WORK ORDER SAMPLE SUMMARY**

Client: Environmental Restoration

Project: Markham Dump

Lab Order: 11D0912

Lab Sample ID	Client Sample ID	Tag Number	<b>Collection Date</b>	Date Received
11D0912-01	DRAFT: MD-SP-01		04/22/2011 11:00	4/22/2011 1:40:00PM
11D0912-02	DRAFT: MD-SP-01		04/22/2011 11:00	4/22/2011 1:40:00PM



# Partial 4/30/2011

CASE NARRATIVE Date: Saturday, April 30, 2011

Client: Environmental Restoration

Project: Markham Dump

Lab Order: 11D0912

The Matrix Spike and Matrix Spike Duplicate performed on the MD-SP-01 sample failed the precision criteria for Phenolics. A Post Digestion Spike was performed and did not meet the acceptance criteria. This data is indicative of matrix interference.

B - the Method Blank associated with the MD-SP-01 sample contained Chromium and Lead at a level above the reporting limit. This is considered insignificant, as the concentration in the sample was more than ten-times that measured in the blank.



# **Partial** 4/30/2011

**Analytical Results** Date: Saturday, April 30, 2011

**Environmental Restoration** Client:

**Client Project:** Markham Dump

DRAFT: MD-SP-01 Work Order/ID: 11D0912-01 **Client Sample ID:** 

**Sample Description:** 

Surr: 1,2-Dichloroethane-d4

Surr: 4-Bromofluorobenzene

Surr: Dibromofluoromethane

Surr: Toluene-d8

04/22/2011 11:00 Sampled: 04/22/2011 13:40 Matrix: Solid Received:

Analyses	AT	Result	RL	Qual Units	DF	Analyzed
		Method: SW-846 80	82		An	alyst: <b>clr</b>
Polychlorinated Biphenyls	F	rep Method: SW846 355	50B		Prep Date/	Time: 04/25/2011 12:26
Aroclor 1016	Α	ND	170	μg/Kg	5	04/26/2011 22:54
Aroclor 1221	А	ND	170	μg/Kg	5	04/26/2011 22:54
Aroclor 1232	А	ND	170	μg/Kg	5	04/26/2011 22:54
Aroclor 1242	А	ND	170	μg/Kg	5	04/26/2011 22:54
Aroclor 1248	А	700	170	μg/Kg	5	04/26/2011 22:54
Aroclor 1254	А	ND	170	μg/Kg	5	04/26/2011 22:54
Aroclor 1260	А	390	170	μg/Kg	5	04/26/2011 22:54
Aroclor 1262	А	ND	170	μg/Kg	5	04/26/2011 22:54
Aroclor 1268	Α	ND	170	μg/Kg	5	04/26/2011 22:54
Total PCB's	А	1100	170	μg/Kg	5	04/26/2011 22:54
Surr: Decachlorobiphenyl	S	125.00	38-128	%REC	5	04/26/2011 22:54
Surr: Tetrachloro-m-xylene	S	100.00	40-130	%REC	5	04/26/2011 22:54

TCLP VOA Zero Head Extraction	Prei	Method: 1311/8260I		Analyst:j <b>ln</b> Prep Date/Time: <b>04/26/2011 08:25</b>		
1.1-Dichloroethene	A	ND	0.050	mg/L	10	04/26/2011 12:44
1.2-Dichloroethane	A	ND	0.050	mg/L	10	04/26/2011 12:44
2-Butanone	A	ND	0.030	mg/L	10	04/26/2011 12:44
Benzene	A	ND	0.050	mg/L	10	04/26/2011 12:44
Carbon tetrachloride	A	ND	0.050	mg/L	10	04/26/2011 12:44
Chlorobenzene	А	ND	0.050	mg/L	10	04/26/2011 12:44
Chloroform	А	ND	0.050	mg/L	10	04/26/2011 12:44
Tetrachloroethene	А	ND	0.050	mg/L	10	04/26/2011 12:44
Trichloroethene	А	ND	0.050	mg/L	10	04/26/2011 12:44
Vinyl chloride	А	ND	0.020	mg/L	10	04/26/2011 12:44
1,4-Dichlorobenzene	В	ND	0.10	mg/L	10	04/26/2011 12:44

	Method	:1311/7470A	Analyst: <b>SA</b>					
TCLP Mercury by CVAA	Prep Method	:/SW-846 7470			Prep Date/	Time: 04/25/2011 09:25		
Mercury	Α	ND	0.00100	ma/L	1	04/25/2011 14:18		

74.5-132

80-120

80-120

80-120

%REC

%REC

%REC

%REC

10

10

10

10

S 84.30

102.00

101.00

S

S

S 93.50

			Method: 1311/6010	)B		Aı	nalyst: <b>SA</b>		
TC	LP Metals by ICP	Р	rep Method:/SW846 3	010A	P	Prep Date/Time: 04/25/2011 09:07			
	Arsenic	Α	ND	0.0100	mg/L	1	04/25/2011 14:59		
	Barium	Α	0.960	0.500	mg/L	1	04/25/2011 14:59		
	Cadmium	Α	0.181	0.00200	mg/L	1	04/25/2011 14:59		
	Chromium	Α	0.00590	0.00300	mg/L	1	04/25/2011 14:59		
	Lead	Α	1.89	0.00750	mg/L	1	04/25/2011 14:59		
	Selenium	Α	ND	0.0300	mg/L	1	04/25/2011 14:59		

04/26/2011 12:44

04/26/2011 12:44

04/26/2011 12:44

04/26/2011 12:44



# **Partial** 4/30/2011

**Analytical Results** Date: Saturday, April 30, 2011

Client: **Environmental Restoration** 

**Client Project:** Markham Dump

DRAFT: MD-SP-01 Work Order/ID: 11D0912-01 **Client Sample ID:** 

Sample Description:

Reactive Sulfide

04/22/2011 11:00 Sampled: Solid Received: 04/22/2011 13:40 Matrix:

Matrix: Solid					Receive	ed:	04/22/2011 13:40
Analyses	AT	Result	RL	Qual	Units	DF	Analyzed
		Method: 1311/6010	В			An	alyst: <b>SA</b>
TCLP Metals by ICP	F	Prep Method:/SW846 30	)10A			Prep Date/	Time: 04/25/2011 09:07
Silver	Α	ND	0.0100		mg/L	1	04/25/2011 14:59
		Method: ASTM D92	2-90 Modified			An	alyst: <b>TMG</b>
Ignitability (Open Cup)						Prep Date/	Time: 04/28/2011 17:26
Ignitability	Α	> 170	30		°F	1	04/28/2011 17:26
		Method: <b>SW-846 90</b>	95B			An	alyst: <b>ABG</b>
Paint Filter						Prep Date/	Time: 04/25/2011 12:35
Paint Filter	Α	Pass	0.0		Pass/Fail	1	04/25/2011 12:49
		Method: SW-846 90	)45C			An	alyst: ABG
pH						Prep Date/	Time: 04/25/2011 14:55
pH	Α	7.58	2.00		pH Units	1	04/25/2011 15:03
		Method: SW-846 90	066			An	alyst: <b>EINIK</b>
Total Phenolics	F	Prep Method: Solid Phe	nolics Distillation	on		Prep Date/	Time: 04/27/2011 11:25
Phenolics, Total Recoverable	Α	5.7	0.50		mg/Kg	1	04/27/2011 14:21
		Method: Chapter 7/	9014			An	alyst: <b>EINIK</b>
Reactive Cyanide	F	Prep Method: Solid Read	ctive CN Distilla	ation		Prep Date/	Time: 04/27/2011 12:15
Reactive Cyanide	Α	ND	10		mg/Kg	1	04/27/2011 16:36
		Method: Chapter 7/	9034			An	alyst: <b>ABG</b>
Reactive Sulfide	F	Prep Method: Solid Rea	ctive Sulfide Di	stillatior	ı	Prep Date/	Time: 04/27/2011 12:15

ND

10

mg/Kg

Α

04/27/2011 15:34



# Partial 4/30/2011

Analytical Results Date: Saturday, April 30, 2011

Client: Environmental Restoration

Client Project: Markham Dump

Client Sample ID: DRAFT: MD-SP-01 Work Order/ID: 11D0912-02

 Sample Description:
 Sampled:
 04/22/2011
 11:00

Matrix: Solid Received: 04/22/2011 13:40

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed			
	Method: <b>SW-846 6010B</b>							Analyst: <b>SA</b>			
To	otal Metals by ICP	Р	rep Method: SW846 30	50B			Prep Date/	Time: 04/25/2011 10:55			
	Chromium	Α	130	1	3 B	mg/Kg	10	04/28/2011 0:02			
	Lead	Α	1800	3	3 B	mg/Kg	10	04/28/2011 0:02			

#### FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

NA = Not Analyzed

mg/L = Milligrams per Liter (ppm)
mg/Kg = Milligrams per Kilogram (ppm)

U = Undetected

J = Analyte concentration detected between RL and MDL (Metals / Organics)

B = Detected in the associated method Blank at a concentration above the routine PQL/RL

D = Dilution performed on sample

ND = Not Detected at the Reporting Limit (or the Method Detection Limit, if used)

E = Value above quantitation range

H = Analyte was prepared and/or analyzed outside of the analytical method holding time

I = Matrix Interference

R = RPD outside accepted recovery limits
S = Spike recovery outside recovery limits

 Surr
 =
 Surrogate

 DF
 =
 Dilution Factor

 RL
 =
 Reporting Limit

 MDL
 =
 Method Detection Limit

 NR
 =
 Not Recovered

#### **ANALYTE TYPES: (AT)**

A,B = Target Analyte
I = Internal Standard
M = Summation Analyte

S = Surrogate

T = Tentatively Identified Compound (TIC, concentration estimated)

#### **QC SAMPLE IDENTIFICATIONS**

MBLK	=	Method Blank	ICSA	=	Interference Check Standard "A"
DUP	=	Method Duplicate	<b>ICSAB</b>	=	Interference Check Standard "AB"
LCS	=	Laboratory Control Sample	LCSD	=	Laboratory Control Sample Duplicate
BS	=	Method Blank Spike	BSD	=	Method Blank Spike Duplicate
MS	=	Matrix Spike	MSD	=	Matrix Spike Duplicate
ICB	=	Initial Calibration Blank	CCB	=	Continuing Calibration Blank
ICV	=	Initial Calibration Verification	CCV	=	Continuing Calibration Verification
PDS	=	Post Digestion Spike	SD	=	Serial Dilution

OPR = Ongoing Precision and Recovery Standard

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Wisconsin DNR for the chemical analysis of wastewater and solid waste (lab #998036710)



# **Partial** 4/30/2011

**COOLER INSPECTION** 

COOLER INSPECT	ΓΙΟΝ			_	Date:	Saturda	ıy, April 30, 20	011	
Client Name: Environn	nental Restoration		Da	te/Time Re	ceived:	04/22/2	2011 13:40		
Work Order Number:	11D0912		Re	ceived by:	Dave I	3ryant			
Checklist completed by:	4/22/2011 1:57:00PM	Dave Bryant	Re	viewed by:	4/22/	2011	KGF		
		Carrier Name:	- Microbac				•		
	Cooler ID: Default Cooler		(	Container/T	amn Blani	z Tampar	rature: 5.00	)°C	
	oolel ID. Delault Coolel			Jonannei/ 1	спр Бап	x remper	ature. 5.00	C	
After-Hour Arrival?			Ye	s $\square$	No	$\checkmark$			
Shipping container/coo	ler in good condition?		Ye	s 🗸	No		Not Present		
•	n shipping container/cooler?	)	Ye	s 📙	No	Ш	Not Present	$\checkmark$	
Custody seals intact or	ı sample containers?		Ye	-	No	Ш	Not Present	$\checkmark$	
COC present?			Ye	i i	No	Н			
COC included sufficien		0	Ye		No	Н			
	t sample collector information	on?	Ye	· i	No	H			
COC included a sample COC agrees with sample	•		Ye Ye	i i	No No	Н			
COC agrees with same			Ye		No No	Н			
COC included date of o	-		Ye	· i	No	H			
COC included time of c			Ye	i i	No	Н			
	ropriate number of containe	ers?	Ye		No	H			
Samples in proper conf			Ye	· i	No	Н			
Sample containers inta			Ye	s 🗸	No	П			
Sufficient sample volun	ne for indicated test?		Ye	s 🗸	No	П			
All samples received w	ithin holding time?		Ye	s 🗸	No				
If the samples are pres	erved, are the preservatives	s identified?	Ye	s 🗸	No				
	If No, adjuste	d by?							
COC included the requ	ingted analysis		Va	. [7]	No				
· ·	ested analyses? equished and received?		Ye Ye	i i	No No	H			
Samples received on ic	•		Ye		No	H			
Samples properly prese			Ye	$\vdash$	No	H			
	samples have zero headspa	ace?	Ye	i i	No	No	VOA vials su	bmitted	<b>✓</b>
Cooler Comments:									
ANY "NO" EVALUAT	ION (excluding After-Hour F	— — — — — Receipt) REQUIRES	CLIENT NO	— — — OTIFICAT	ION.				
Sample ID C	lient Sample ID	Comments							
	ID-SP-01								
11D0912-02 M	ID-SP-01	İ							
									$\overline{}$

100 (lab use only) Remarks/Containment Sample # (lab only) Chain of Custody (1180911) VEHWE. Condition (lab use only) の子子の PH Checked NCF: Temp Other Femplate/Prelogin Prepared by: Shipped Via: CoCode UPS Bottles Received: Flow H × Analysis/Container/Preservative Time: Courier X Samples returned via: | Fed Ex Temp: Date: OT - Other Containers Š ö Project Name: May Elvem Damp tuituse Berllerom DW - Drinking Water X Yes Yes Time 1100 POBY VEHINGE Date Results Needed: 9 2 Received for lab by: (Signature) すって Date Email? Fax? Alternate billing information: WW - WasteWater City/State Collected: Depth (Lab MUST Be Notified) Report to: Same Day Email to: Next Day Two Day Matrix\* me: 452Ph 1666 Fabick Drive Fenton, MO 63026 (636) 227-7477 Fax (636) 227-6447 ENVIRONMENTAL RESTORATIONLC GW - Groundwater 4-22-11 Date: 1. B. Comp/Grab Site/Facility ID #: Som D. Rush / Client: 10 hy Che House SS - Soil/Solid 636 630 2474 e: 3124466318 MD-5P-01 ed on Ice Sample ID Remarks: ription: \*Matrix 11D0912 Kevin Faivey ER - South Holland Waste Characterization



Work Order No.: 11D0950

April 30, 2011

Environmental Restoration 16660 South Canal Street South Holland, IL 60437-

Re: Markham Dump

Dear Toby Viehweg:

Microbac Laboratories, Inc. - Chicagoland Division received 2 sample(s) on 4/25/2011 2:22:00PM for the analyses presented in the following report as Work Order 11D0950.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Jeff Loewe, Division Manager at jeff.loewe@microbac.com. You may also contact Sean Hyde, Chief Operating Officer at sean.hyde@microbac.com or James Nokes, President at james.nokes@microbac.com.

H. Falmer

Sincerely,

Kevin Falvey Account Manager



Date:

## **WORK ORDER SAMPLE SUMMARY**

Client: Environmental Restoration

**Project:** Markham Dump

Lab Order: 11D0950

Lab Sample ID	Client Sample ID	Tag Number	<b>Collection Date</b>	Date Received
11D0950-01	MD-YW		04/25/2011 11:00	4/25/2011 2:22:00PM
11D0950-02	MD-CEW		04/25/2011 11:00	4/25/2011 2:22:00PM

Saturday, April 30, 2011



CASE NARRATIVE Date: Saturday, April 30, 2011

Client: Environmental Restoration

Project: Markham Dump

Lab Order: 11D0950

The Matrix Spike and Matrix Spike Duplicate performed on the MD-CEW sample failed the accuracy criteria for Lead with a low bias. The precision criteria were met. A Post Digestion Spike was performed and the acceptance criteria was not met, indicating matrix interference.



Analytical Results Date: Saturday, April 30, 2011

Client: Environmental Restoration

Client Project: Markham Dump

Client Sample ID: MD-YW Work Order/ID: 11D0950-01

 Sample Description:
 Sampled:
 04/25/2011 11:00

Matrix: Aqueous Received: 04/25/2011 14:22

Analyses	ΑT	Result	RL	Qual	Units	DF	Analyzed				
		Method: SW-846 6010	В			An	alyst: <b>SA</b>				
Total Metals by ICP	F	rep Method: <b>SW846 3010</b>	Α			Prep Date/	Time: 04/26/2011 08:14				
Arsenic	Α	ND	0.010		mg/L	1	04/27/2011 16:48				
Barium	Α	10	0.0020		mg/L	1	04/27/2011 16:48				
Cadmium	Α	0.020	0.0020		mg/L	1	04/27/2011 16:48				
Chromium	Α	22	0.0030		mg/L	1	04/27/2011 16:48				
Lead	Α	100	0.0075		mg/L	1	04/27/2011 16:48				
Selenium	Α	ND	0.030		mg/L	1	04/27/2011 16:48				
Silver	Α	ND	0.010		mg/L	1	04/27/2011 16:48				
		Method: <b>SW-846 7470</b>	Α			An	alyst: RPL				
Total Mercury by CVAA	F	rep Method: <b>SW-846 747</b> 0	)			Prep Date/	Time: 04/26/2011 08:31				
Mercury	Α	0.00067	0.00025		mg/L	1	04/27/2011 16:01				
Method: SW-846 7196A Analyst: EINIK											
Hexavalent Chromium						Prep Date/	Time: 04/26/2011 08:15				
Chromium, Hexavalent	Α	0.40	0.020		mg/L	2	04/26/2011 9:09				



**Analytical Results** Date: Saturday, April 30, 2011

Client: **Environmental Restoration** 

**Client Project:** Markham Dump

Client Sample ID: MD-CEW Work Order/ID: 11D0950-02

**Sample Description:** 

Sampled: 04/25/2011 11:00 04/25/2011 14:22 Matrix: Aqueous Received:

Analyses	AT	Result	RL	Qual	Units	DF	Analyzed			
		Method: SW-846 60		Analyst: <b>SA</b>						
Total Metals by ICP	F	Prep Method: SW846 30	10A		Prep Date/Time: 04/26/2011 08:14					
Arsenic	A	ND	0.010	ı	mg/L	1	04/27/2011 16:54			
Barium	Α	0.64	0.0020	ı	mg/L	1	04/27/2011 16:54			
Cadmium	Α	0.0060	0.0020	ı	mg/L	1	04/27/2011 16:54			
Chromium	Α	0.33	0.0030	ı	mg/L	1	04/27/2011 16:54			
Lead	Α	7.2	0.0075	1	mg/L	1	04/27/2011 16:54			
Selenium	Α	ND	0.030	1	mg/L	1	04/27/2011 16:54			
Silver	Α	ND	0.010	1	mg/L	1	04/27/2011 16:54			
		Method: SW-846 74		Analyst: RPL						
Total Mercury by CVAA	F	Prep Method: SW-846 74	170		Prep Date/Time: 04/26/2011 08:31					
Mercury	А	0.0020	0.00025	ı	mg/L	1	04/27/2011 16:05			

		Method: <b>SW-846 7</b> ′	196A		Aı	nalyst: <b>EINIK</b>
Hexavalent Chromium					Prep Date	/Time: 04/26/2011 08:15
Chromium. Hexavalent	А	ND	0.010	mg/L	1	04/26/2011 8:39



#### FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

NA Not Analyzed

mg/L Milligrams per Liter (ppm) = Milligrams per Kilogram (ppm)

mg/Kg

U Undetected

J Analyte concentration detected between RL and MDL (Metals / Organics)

В Detected in the associated method Blank at a concentration above the routine PQL/RL

D Dilution performed on sample

ND Not Detected at the Reporting Limit (or the Method Detection Limit, if used)

Ε Value above quantitation range

Н Analyte was prepared and/or analyzed outside of the analytical method holding time

Matrix Interference

R RPD outside accepted recovery limits S Spike recovery outside recovery limits

Surr Surrogate DF **Dilution Factor** Reporting Limit RL MDL Method Detection Limit Not Recovered NR

#### **ANALYTE TYPES: (AT)**

A,B =Target Analyte Internal Standard М Summation Analyte

Surrogate

Tentatively Identified Compound (TIC, concentration estimated)

#### QC SAMPLE IDENTIFICATIONS

MBLK	=	Method Blank	ICSA	=	Interference Check Standard "A"
DUP	=	Method Duplicate	ICSAB	=	Interference Check Standard "AB"
LCS	=	Laboratory Control Sample	LCSD	=	Laboratory Control Sample Duplicate
BS	=	Method Blank Spike	BSD	=	Method Blank Spike Duplicate
MS	=	Matrix Spike	MSD	=	Matrix Spike Duplicate
ICB	=	Initial Calibration Blank	CCB	=	Continuing Calibration Blank
ICV	=	Initial Calibration Verification	CCV	=	Continuing Calibration Verification
PDS	=	Post Digestion Spike	SD	=	Serial Dilution
000		0 . 0	and the second		

OPR Ongoing Precision and Recovery Standard

#### CERTIFICATIONS

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

The American Association for Laboratory Accreditation [A2LA] for Biological Testing, ISO/IEC 17025 (Certificate# 3045.01)

The American Association for Laboratory Accreditation [A2LA] for Environmental Department of Defense Testing, ISO/IEC 17025 (Certificate# 3045.02)

Illinois EPA for the analysis wastewater and solid waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (accreditation #200064)

Illinois Department of Public Health for the microbiological analysis of drinking water (registry #1755266)

Indiana DEM approved support laboratory for solid waste and wastewater analyses

Indiana SDH for the chemical analysis of drinking water (lab #C-45-03)

Indiana SDH for the microbiological analysis of drinking water (lab #M-45-8)

Kansas Department of Health and Environment for the analysis of drinking water, wastewater, and solid hazardous waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (Certificate No. E-10397)

Kentucky EPPC for the analysis of samples applicable to the Underground Storage Tank program (lab #75)

North Carolina DENR for the environmental analysis for NPDES effluent, surface water, groundwater, and pretreatment regulations(certificate #597)

Wisconsin DNR for the chemical analysis of wastewater and solid waste (lab #998036710)



### COOLER INSPECTION

Client Name: Environi			Date/Time Rec	-	y, April 30, 2011 011 14:22
Work Order Number:	11D0950		Received by:	Dave Bryant	
		I.	•	-	lvan
Checklist completed by:	4/25/2011 2:33:00PM	Dave Bryant	Reviewed by:	4/25/2011	KGF
		Carrier Name: Mi	crobac		
(	Cooler ID: Default Cooler		Container/Ter	mp Blank Tempera	ature: 6.00°C
After-Hour Arrival?			Yes $\square$	No 🗸	
Shipping container/cod	oler in good condition?		Yes 🗸	No 1	Not Present
Custody seals intact o	n shipping container/cooler	?	Yes	No 1	Not Present
Custody seals intact o	n sample containers?		Yes	No 1	Not Present
COC present?			Yes ✓	No	<del></del>
COC included sufficier	nt client identification?		Yes ✓	No	
COC included sufficier	nt sample collector informat	tion?	Yes ✓	No	
COC included a samp	•		Yes ✓	No	
COC agrees with sam	-		Yes ✓	No	
COC identified the app	•		Yes ✓	No	
COC included date of			Yes ✓	No	
COC included time of			Yes 🗸	No	
	propriate number of contain	ers?	Yes 🗸	No	
Samples in proper cor			Yes 🗸	No L	
Sample containers into			Yes 🗸	No	
Sufficient sample volu			Yes 🗸	No	
All samples received v		. 1 (.0. 10	Yes 🗸	No L	
if the samples are pres	served, are the preservative	es identified?	Yes 🗸	No	
	If No, adjust	ed by?			
COC included the requ	uested analyses?		Yes 🗸	No $\square$	
•	nquished and received?		Yes V	No H	
Samples received on i			Yes V	No H	
Samples properly pres			Yes V	No H	
	samples have zero headsp	ace?	Yes	<b>─</b>	VOA vials submitted
Cooler Comments:	·		_		_
 ANY "NO" EVALUAT	TION (excluding After-Hour	— — — — — — Receipt) REOUIRES CI		ON.	
	Client Sample ID	Comments		•	
	MD-YW				
	MD-CEW				
*******					

Chain of Custody	Page of I					1100950		(lab use only)	Template/Prelogin Shipped Via:	Remarks/Containment Sample # (lab only)		40								TT NO C due!	Jego	Condition (lab use only)			pH Checked NCF:
servative					<u>ales</u>															픱	Flow		Courier	Bottles Received:	Time:
Analysis/Container/Preservative				1																		d via:		けっぴ	-
Analysis/Co		3w	9/ V	17	+	n <del>o</del> ls	PA 1	<i>₩</i>	<u>9+1</u>		X	<b>y</b>								***************************************		Samples returned via:	Fed Ex	ъ: С	741
	nt )	etals.	1	8	tí	לוג	R	12	ru Tu		X X	l								OT - Other		San		Temp:	Date:
			With the state of	600		Š		No.	of Containers																
			2 T 8 4 5 -	16 H WYS & &/ 116,(69)	7 2 2 2 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Project Name:		Needed:	No Yes	Time	8	100		<i>-</i>						DW - Drinking Water		MA		``	(gnature)
on:				2 1 2 1 2 1 2 2 2 2 2 2 2 2 2 2 2 2 2 2	3	Project Name	P.O. #:	Date Results Needed:	Email? Fax?	Date	4-55-II	4.35.								/ater	5	by: (Signifue)	(Signature)		of Proposition of the Propositio
ing informati			000	>	Collected:	The second secon			4	Depth										WW - WasteWater	m <sub>2</sub>	Receipt by	Received by: (Signature		Received of Applications of Ap
Alternate billing information:		Report to:						(Lab MUST Be Notified)	Same Day Next Day Two Day	Matrix*	78	1200										Time:		CN	Time:
	ENVIRONMENTAL RESTORATION LC	1666 Fabick Drive Fenton, MO 63026 (636) 227-7477 Fax (636) 227-6447				Client: 2.5 £ P B	Site/Facility ID #:	Rush (Lab MUST	( man effer	Comp/Grab										GW - Groundwater		Date:	Date:	43511	Date:
110	ENVIR REST	in Falvev		10	ription:	6366862479	cted by: A R. W.C.	Scied by (signature):	X N eol no be.	Sample ID	7:7 - QW	MD-68 W								*Matrix SS - Soil/Solid	Remarks: , ON	Relinquished by (Signature)	Relinguished/by <sub>A</sub> (Signaterie)	S S S S S S S S S S S S S S S S S S S	reimquighed by: (Signature)

Markham



Work Order No.: 11F1577

July 6, 2011

Environmental Restoration 16660 South Canal Street South Holland, IL 60437-

Re: Markham

Dear Toby Viehweg:

Microbac Laboratories, Inc. - Chicagoland Division received 22 sample(s) on 6/27/2011 9:40:00AM for the analyses presented in the following report as Work Order 11F1577.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

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We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Jeff Loewe, Division Manager at jeff.loewe@microbac.com. You may also contact Sean Hyde, Chief Operating Officer at sean.hyde@microbac.com or James Nokes, President at james.nokes@microbac.com.

H. Talmey

Sincerely,

Kevin Falvey Account Manager



Date:

## **WORK ORDER SAMPLE SUMMARY**

Client: Environmental Restoration

**Project:** Markham **Lab Order:** 11F1577

Client Sample ID	Tag Number	Collection Date	Date Received
A1	0-3"	06/24/2011 10:20	6/27/2011 9:40:00AM
A2	0-3"	06/24/2011 10:22	6/27/2011 9:40:00AM
A3	0-3"	06/24/2011 10:25	6/27/2011 9:40:00AM
A5	0-3"	06/24/2011 10:35	6/27/2011 9:40:00AM
B1	0-3"	06/24/2011 10:15	6/27/2011 9:40:00AM
B2	0-3"	06/24/2011 10:55	6/27/2011 9:40:00AM
B3	0-3"	06/24/2011 10:50	6/27/2011 9:40:00AM
B5	0-3"	06/24/2011 10:45	6/27/2011 9:40:00AM
C1	0-3"	06/24/2011 10:00	6/27/2011 9:40:00AM
C2	0-3"	06/24/2011 11:03	6/27/2011 9:40:00AM
C3	0-3"	06/24/2011 11:10	6/27/2011 9:40:00AM
C4	0-3"	06/24/2011 11:15	6/27/2011 9:40:00AM
C5	0-3"	06/24/2011 11:20	6/27/2011 9:40:00AM
D1	0-3"	06/24/2011 09:50	6/27/2011 9:40:00AM
D2	0-3"	06/24/2011 11:40	6/27/2011 9:40:00AM
D3	0-3"	06/24/2011 11:30	6/27/2011 9:40:00AM
E1	0-3"	06/24/2011 09:40	6/27/2011 9:40:00AM
E2	0-3"	06/24/2011 11:45	6/27/2011 9:40:00AM
E3	0-3"	06/24/2011 11:50	6/27/2011 9:40:00AM
E4	0-3"	06/24/2011 11:55	6/27/2011 9:40:00AM
E5	0-3"	06/24/2011 12:45	6/27/2011 9:40:00AM
D5	0-3"	06/24/2011 15:13	6/27/2011 9:40:00AM
	A2 A3 A5 B1 B2 B3 B5 C1 C2 C3 C4 C5 D1 D2 D3 E1 E2 E3 E4 E5	A1 0-3" A2 0-3" A3 0-3" A5 0-3" B1 0-3" B2 0-3" B3 0-3" B5 0-3" C1 0-3" C2 0-3" C2 0-3" C3 0-3" C4 0-3" C5 0-3" D1 0-3" D2 0-3" D1 0-3" E1 0-3" E2 0-3" E1 0-3" E2 0-3" E3 0-3" E4 0-3" E4 0-3"	A1       0-3"       06/24/2011 10:20         A2       0-3"       06/24/2011 10:22         A3       0-3"       06/24/2011 10:25         A5       0-3"       06/24/2011 10:35         B1       0-3"       06/24/2011 10:15         B2       0-3"       06/24/2011 10:50         B3       0-3"       06/24/2011 10:50         B5       0-3"       06/24/2011 10:00         C1       0-3"       06/24/2011 10:00         C2       0-3"       06/24/2011 11:03         C3       0-3"       06/24/2011 11:10         C4       0-3"       06/24/2011 11:15         C5       0-3"       06/24/2011 11:20         D1       0-3"       06/24/2011 11:40         D3       0-3"       06/24/2011 11:40         D3       0-3"       06/24/2011 11:40         D3       0-3"       06/24/2011 11:40         D3       0-3"       06/24/2011 11:45         E3       0-3"       06/24/2011 11:45         E4       0-3"       06/24/2011 11:55         E5       0-3"       06/24/2011 12:45

Wednesday, July 6, 2011



CASE NARRATIVE Date: Wednesday, July 6, 2011

Client: Environmental Restoration

**Project:** Markham **Lab Order:** 11F1577

The Matrix Spike and Matrix Spike Duplicate performed on the D2 sample failed the accuracy criteria for Chromium and Lead. This bias is due to the high indigenous analyte concentration (relative to the spike amount).



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 A1
 Work Order/ID:
 11F1577-01

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 10:20

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed			
			Method: SW-846 60	010B			An	alyst: <b>SA</b>			
Total Metals by ICP		Р	rep Method: SW846 30	50B			Prep Date/	Time: 06/28/2011 08:15			
	Chromium	Α	110	0.14	n	ng/Kg	1	06/28/2011 21:58			
	Lead	Α	18000	35	n	ng/Kg	100	06/29/2011 13:48			



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 A2
 Work Order/ID:
 11F1577-02

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 10:22

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

Aı	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed
			Method: SW-846 6	010B			Ar	nalyst: <b>SA</b>
Total Metals by ICP		F	Prep Method: SW846 30	)50B		Р	rep Date/	Time: 06/28/2011 08:15
	Chromium	Α	130	0.14		mg/Kg	1	06/28/2011 22:04
	Lead	Α	32000	34		mg/Kg	100	06/29/2011 13:53



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 A3
 Work Order/ID:
 11F1577-03

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 10:25

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

A	nalyses	A	T	Result	RL	Qual	Units	DF	Analyzed
	Method: SW-846 6010B					Ar	alyst: <b>SA</b>		
Total Metals by ICP			Р	rep Method: SW846 30	50B		Р	rep Date/	Time: 06/28/2011 08:15
	Chromium		Α	57	0.10		mg/Kg	1	06/28/2011 22:31
	Lead		Α	5600	0.26		mg/Kg	1	06/28/2011 22:31



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 A5
 Work Order/ID:
 11F1577-04

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 10:35

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

Α	nalyses	A	Т	Result	RL	Qual	Units	DF	Analyzed
				Method: SW-846 6	010B			An	alyst: <b>SA</b>
Total Metals by ICP			Ρ	rep Method: SW846 30	50B		Р	rep Date/	Time: 06/28/2011 08:15
	Chromium	A	4	25	0.15		mg/Kg	1	06/28/2011 22:37
	Lead	1	4	730	0.37		mg/Kg	1	06/28/2011 22:37



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 B1
 Work Order/ID:
 11F1577-05

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 10:15

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed
			Method: SW-846 6	010B			An	nalyst: <b>SA</b>
Total Metals by ICP		F	Prep Method: SW846 30	050B		Р	rep Date/	Time: 06/28/2011 08:15
	Chromium	Α	52	0.14		mg/Kg	1	06/28/2011 22:43
	Lead	Α	1700	0.35		mg/Kg	1	06/28/2011 22:43



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 B2
 Work Order/ID:
 11F1577-06

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 10:55

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

Aı	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed
	Method: <b>SW-846 6010B</b>						An	alyst: <b>SA</b>
Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 06/28/2011 08:15		
	Chromium	Α	50	0.14	n	ng/Kg	1	06/28/2011 22:48
	Lead	Α	7500	0.35	n	ng/Kg	1	06/28/2011 22:48



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 B3
 Work Order/ID:
 11F1577-07

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 10:50

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed	
	Method: <b>SW-846 6010B</b>					An	alyst: <b>SA</b>		
Total Metals by ICP		Prep Method: SW846 3050B					Prep Date/Time: 06/28/2011 08:15		
	Chromium	Α	19	0.13	r	ng/Kg	1	06/28/2011 22:54	
	Lead	Α	2900	0.33	r	ng/Kg	1	06/28/2011 22:54	



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 B5
 Work Order/ID:
 11F1577-08

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 10:45

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

Α	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed	
		Method: SW-846 6010B				Analyst: <b>SA</b>			
Total Metals by ICP		F	rep Method: SW846 30	)50B		Prep Date/Time: 06/28/2011 08:15			
	Chromium	Α	72	0.14	r	ng/Kg	1	06/28/2011 22:59	
	Lead	Α	570	0.36	r	ng/Kg	1	06/28/2011 22:59	



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 C1
 Work Order/ID:
 11F1577-09

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 10:00

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed
	Method: <b>SW-846 6010B</b>						An	alyst: <b>SA</b>
Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 06/28/2011 08:15		
	Chromium	Α	150	0.13	n	ng/Kg	1	06/28/2011 23:05
	Lead	Α	5000	0.32	n	ng/Kg	1	06/28/2011 23:05



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 C2
 Work Order/ID:
 11F1577-10

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 11:03

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

Α	nalyses	AT	Result	RL	Qual Unit	s DF	Analyzed
			Method: SW-846 6	010B		Aı	nalyst: <b>SA</b>
Total Metals by ICP		Р	rep Method: SW846 30	050B		Prep Date	/Time: 06/28/2011 08:15
	Chromium	Α	830	0.13	mg/Kg	1	06/28/2011 23:11
	Lead	А	11000	0.32	mg/Kg	1	06/28/2011 23:11



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 C3
 Work Order/ID:
 11F1577-11

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 11:10

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed
	Method: <b>SW-846 6010B</b>			Analyst: <b>SA</b>				
Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 06/28/2011 08:15		
	Chromium	Α	220	0.15	n	ng/Kg	1	06/28/2011 23:17
	Lead	Α	8600	0.38	n	ng/Kg	1	06/28/2011 23:17



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 C4
 Work Order/ID:
 11F1577-12

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 11:15

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed
			Method: SW-846 6	010B			Ar	nalyst: <b>SA</b>
Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 06/28/2011 08:15		
	Chromium	Α	54	0.13		mg/Kg	1	06/28/2011 23:22
	Lead	Α	1300	0.33		mg/Kg	1	06/28/2011 23:22



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 C5
 Work Order/ID:
 11F1577-13

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 11:20

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

Aı	nalyses	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SW-846 6	010B			An	alyst: <b>SA</b>
Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 06/28/2011 08		
	Chromium	Α	35	0.15	r	ng/Kg	1	06/28/2011 23:49
	Lead	Α	600	0.37	r	ng/Kg	1	06/28/2011 23:49



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 D1
 Work Order/ID:
 11F1577-14

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 9:50

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

Ar	nalyses	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SW-846 6	010B			An	alyst: <b>SA</b>
Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 06/28/2011 08		
	Chromium	Α	430	0.15	r	ng/Kg	1	06/28/2011 23:55
	Lead	Α	5500	0.37	r	ng/Kg	1	06/28/2011 23:55



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 D2
 Work Order/ID:
 11F1577-15

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 11:40

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

Ar	nalyses	AT	Result	RL	Qual	Units	DF	Analyzed
			Method: SW-846 6	010B			An	alyst: <b>SA</b>
Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 06/28/2011 11:35		
	Chromium	Α	450	0.14	r	ng/Kg	1	06/29/2011 0:33
	Lead	Α	5100	0.34	r	ng/Kg	1	06/29/2011 0:33



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 D3
 Work Order/ID:
 11F1577-16

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 11:30

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed
			Method: SW-846 60	010B			An	alyst: <b>SA</b>
Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 06/28/2011 11:3		
	Chromium	Α	120	0.14	n	ng/Kg	1	06/29/2011 14:15
	Lead	Α	2900	0.35	n	ng/Kg	1	06/29/2011 14:15



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 E1
 Work Order/ID:
 11F1577-17

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 9:40

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed
Method: SW-846 6010B			Analyst: <b>SA</b>					
Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 06/28/2011 11:35		
	Chromium	Α	560	0.13	n	ng/Kg	1	06/29/2011 14:21
	Lead	Α	3500	0.33	n	ng/Kg	1	06/29/2011 14:21



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 E2
 Work Order/ID:
 11F1577-18

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 11:45

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

Ar	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed
			Method: SW-846 6	010B			Ar	alyst: <b>SA</b>
Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 06/28/2011 11:3		
	Chromium	Α	300	0.14		mg/Kg	1	06/29/2011 14:26
	Lead	Α	2800	0.35		mg/Kg	1	06/29/2011 14:26



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 E3
 Work Order/ID:
 11F1577-19

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 11:50

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed	
			Method: SW-846 60	010B			An	alyst: <b>SA</b>	
Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 06/28/2011 11:35			
	Chromium	Α	120	0.15	r	ng/Kg	1	06/30/2011 18:03	
	Lead	Α	2000	0.38	r	ng/Kg	1	06/29/2011 14:53	



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 E4
 Work Order/ID:
 11F1577-20

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 11:55

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

A	nalyses	<b>A</b> 1	Γ	Result	RL	Qual	Units	DF	Analyzed
				Method: SW-846 6	010B			Ar	nalyst: <b>SA</b>
Total Metals by ICP			Prep Method: SW846 3050B				Prep Date/Time: 06/28/2011 11:35		
	Chromium	A	4	140	0.13		mg/Kg	1	06/30/2011 18:08
	Lead	A	4	1500	0.33		mg/Kg	1	06/29/2011 14:58



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 E5
 Work Order/ID:
 11F1577-21

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 12:45

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

Aı	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed
			Method: SW-846 60	010B			An	alyst: <b>SA</b>
Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 06/28/2011 11:35		
	Chromium	Α	180	0.13	r	ng/Kg	1	06/30/2011 18:14
	Lead	Α	1600	0.32	r	ng/Kg	1	06/29/2011 15:04



Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 D5
 Work Order/ID:
 11F1577-22

 Sample Description:
 0-3"
 Sampled:
 06/24/2011
 15:13

 Matrix:
 Solid
 Received:
 06/27/2011
 9:40

Ar	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed
			Method: SW-846 6	010B			Ar	nalyst: <b>SA</b>
Total Metals by ICP		F	Prep Method: SW846 3050B			Prep Date/Time: 06/28/2011 11:3		
	Chromium	Α	40	0.13	r	ng/Kg	1	06/30/2011 18:19
	Lead	Α	540	0.33	r	ng/Kg	1	06/29/2011 15:10



#### FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

NA Not Analyzed

mg/L Milligrams per Liter (ppm)

mg/Kg Milligrams per Kilogram (ppm)

U Undetected

J Analyte concentration detected between RL and MDL (Metals / Organics)

В Detected in the associated method Blank at a concentration above the routine PQL/RL

D Dilution performed on sample

ND Not Detected at the Reporting Limit (or the Method Detection Limit, if used)

Ε Value above quantitation range

Н Analyte was prepared and/or analyzed outside of the analytical method holding time

Matrix Interference

R RPD outside accepted recovery limits S Spike recovery outside recovery limits

Surrogate Surr DF Dilution Factor Reporting Limit RL MDL Method Detection Limit NR Not Recovered

## **ANALYTE TYPES: (AT)**

A,B =Target Analyte Internal Standard М Summation Analyte

Surrogate

Tentatively Identified Compound (TIC, concentration estimated)

#### QC SAMPLE IDENTIFICATIONS

MBLK	=	Method Blank	ICSA	=	Interference Check Standard "A"
DUP	=	Method Duplicate	ICSAB	=	Interference Check Standard "AB"
LCS	=	Laboratory Control Sample	LCSD	=	Laboratory Control Sample Duplicate
BS	=	Method Blank Spike	BSD	=	Method Blank Spike Duplicate
MS	=	Matrix Spike	MSD	=	Matrix Spike Duplicate
ICB	=	Initial Calibration Blank	CCB	=	Continuing Calibration Blank
ICV	=	Initial Calibration Verification	CCV	=	Continuing Calibration Verification
PDS	=	Post Digestion Spike	SD	=	Serial Dilution
000		0 . 0	and the second		

OPR Ongoing Precision and Recovery Standard

## CERTIFICATIONS

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

The American Association for Laboratory Accreditation [A2LA] for Biological Testing, ISO/IEC 17025 (Certificate# 3045.01)

The American Association for Laboratory Accreditation [A2LA] for Environmental Department of Defense Testing, ISO/IEC 17025 (Certificate# 3045.02)

Illinois EPA for the analysis wastewater and solid waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (accreditation #200064)

Illinois Department of Public Health for the microbiological analysis of drinking water (registry #1755266)

Indiana DEM approved support laboratory for solid waste and wastewater analyses

Indiana SDH for the chemical analysis of drinking water (lab #C-45-03)

Indiana SDH for the microbiological analysis of drinking water (lab #M-45-8)

Kansas Department of Health and Environment for the analysis of drinking water, wastewater, and solid hazardous waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (Certificate No. E-10397)

Kentucky EPPC for the analysis of samples applicable to the Underground Storage Tank program (lab #75)

North Carolina DENR for the environmental analysis for NPDES effluent, surface water, groundwater, and pretreatment regulations(certificate #597)

Wisconsin DNR for the chemical analysis of wastewater and solid waste (lab #998036710)



# **COOLER INSPECTION**

COOLER INSPECT	TION					Date:	Wedne	esday, July	6, 2011	
Client Name: Environm	nental Restoration			Date/	Γime Rec	eived:	06/27/	2011 09:4	0	
Work Order Number:	11F1577			Recei	ved by:	Dave E	Bryant			
Checklist completed by:	6/27/2011 2:38:00PM	Dave Bryant	_	Revie	wed by:	6/27/2	2011		KGF	
		Carrier Name:	Microbac							
C	ooler ID: Default Cooler			Con	tainer/Te	mp Blank	Tempe	erature:	5.00°C	
Custody seals intact on COC present? COC included sufficient COC included sufficient COC included a sample COC agrees with samp COC identified the appr COC included date of COC included time of COC included time of COC identified the appr Samples in proper cont Sample containers intact Sufficient sample volum All samples received with	shipping container/cooler? sample containers?  t client identification? t sample collector informatio e description? le labels? ropriate matrix? collection? ropriate number of container ainer/bottle? ct? ne for indicated test?	s? identified?		Yes	\ \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\	No N		Not Pres Not Pres Not Pres	ent 🗸	
COC included the requirement of the cocycle of the	quished and received? ee?	ce?		Yes Yes Yes Yes Yes	✓ ✓ ✓	No No No No	No	o VOA vi	als submittec	
Cooler Comments:										

ANY "NO" EVALUATION (excluding After-Hour Receipt) REQUIRES CLIENT NOTIFICATION.



Sample ID	Client Sample ID	Comments
11F1577-01	A1	
11F1577-02	A2	
11F1577-03	A3	
11F1577-04	A5	
11F1577-05	B1	
11F1577-06	B2	
11F1577-07	В3	
11F1577-08	B5	
11F1577-09	C1	
11F1577-10	C2	
11F1577-11	C3	
11F1577-12	C4	
11F1577-13	C5	
11F1577-14	D1	
11F1577-15	D2	
11F1577-16	D3	
11F1577-17	E1	
11F1577-18	E2	
11F1577-19	E3	
11F1577-20	E4	
11F1577-21	E5	
11F1577-22	D5	

Chain of Custody	Page of 2					1/6/572	CoCode Anna		Template/Prelogin	Shipped Via:	Remarks/Containment Sample # (lab only)		<b>Co</b>	80		000	90	700		2			2			dwell	Other	Condition (lab use only)	S 0 1	ieived:
Analysis/Container/Preservative																										F <sub>d</sub>	Flow	Samples returned via:	Fed Ex	
Analy				e/11c. com		24	W	No.	<b>'4</b> 0	Containers 🛧		<b>\</b> \( \) -	<b>X</b>	- X	X -	X -	\\ \\ \\ \  \  \  \  \  \  \  \  \  \  \	₩ - -	7	<b>X</b>	X	X -	X		\ <b>X</b> +	or OT-Other		Samples		Lemp.
				184 WEG 801116	Ē	Project Name:	#.O.a.	Date Results Needed:	Email? No Yes	x? No Yes	Date Time	0701   F/7C"		101.9	780	500)	300	250		32	85	SI	25	0360		er DW - Drinking Water		Unativers / Company	(Signature)	
and another the second			Report to:	13	Collected:	ă	a l	(Lab MUST Be Notified) Da	Same Day Em	Two Day Fax?	Matrix* Depth	SIT 0-3" 6														r WW - WasteWater	\	Time: Reported by: A	Fleceived by	
	ENVIRONMENTAL RESTORATION LLC	1666 Fabick Drive Fenton, MO 63026	(836) 227-6447 Fax (636) 227-6447			Olient:	Site/Facility ID #:	Rush			Comp/Grab	Com o													<b>ا</b>	Solid GW - Groundwater		Date	Date:	11/6:3/11
r L/X		vin Falve			əot pription:	# 317 HK66328	exted by:	27 scted by (signature):	MASS TO 12011	∠ N eol no be	Sample ID		7.7	2	<b>~</b>	9	22		3,	5	<b>5</b> 3	7.0	3		2	*Matrix SS - Soil/Solid	Fenarks:	Religiation by: (Signature)	Talmatished by (Signature)	あら一番

Chain of Custody	Page 2 of 2					1118777	(Man esse dell)		Template/Prelogin	Shipped Via:  Remarks/Containment Sample # (lab only)			990	22						Temp	Other	Condition (lab use only) S	
d)							<u> </u>	<b>\$</b>	<u>p</u>	do de										돕	Flow	SHO DPS	er Bottles Received:
Analysis/Container/Preservative																						a:	Courier Be
Analysis/Contai																						Samples returned via:	Fed Ex
					B 18	-7)+ 	98	/ <b>*</b>	40/		Х	X	XX	\ <u>\</u>	少	X				OT - Other	6	Ogil	Temp
				- (lc.com		9 W		No.	Ö	Containers								-		lahul 1 Pri Lombour			
				9	tham U	oct Name: Markham Damo		eded:	No Yes	No Yes	230	0460	S 22.	150	~~~; ; ;	()2(			33 <sup>4</sup> 23	DW - Drinking Water			
ü			12 H WE	4 wes 6	March	Project Name:	P.O. #:	Date Results Needed:	Email?	Fax? Date	3				\; };	12/2						Sending A	Repéive (Signature)
Alternate billing information:			1/2		City/State Collected:	Bahnu		-		Depth					*	. 20				WW - WasteWater	$\rightarrow$	Modelly DV. (3)	Repeive by: (Signature)
Alternate bi				Email to:		4		(Lab MUST Be Notified)	Same Day Next Day	Two Day Matrix*	2,5				\{ 	2/02					F	0	See.
	ENVIRONMENTAL RESTORATION LC	1666 Fabick Drive Fenton, MO 63026 (636) 227-7477	Fax (636) 227-6447			Client USEPA	Site/Facility ID #:	Rush (Lab MU!		Comp/Grab	ر 2 ي				١,	3		And the second s		GW - Groundwater		627.11	Date:
	ENVIRC						Collected by:		J. Wang	ce N Y	03									ss - Soil/Solid	S:	Herman (Signature)	Relinguished by: (Signature)



Work Order No.: 11D1129

May 13, 2011

Environmental Restoration 16660 South Canal Street South Holland, IL 60437-

Re: Markham Dump

Dear Toby Viehweg:

Microbac Laboratories, Inc. - Chicagoland Division received 14 sample(s) on 4/28/2011 4:35:00PM for the analyses presented in the following report as Work Order 11D1129.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Jeff Loewe, Division Manager at jeff.loewe@microbac.com. You may also contact Sean Hyde, Chief Operating Officer at sean.hyde@microbac.com or James Nokes, President at james.nokes@microbac.com.

H. Falmer

Sincerely,

Kevin Falvey Account Manager



Date:

# **WORK ORDER SAMPLE SUMMARY**

Client: Environmental Restoration

Project: Markham Dump

Lab Order: 11D1129

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
11D1129-01	MD-CE		04/28/2011 11:00	4/28/2011 4:35:00PM
11D1129-02	MD-CE		04/28/2011 11:00	4/28/2011 4:35:00PM
11D1129-03	MD-FILL		04/28/2011 11:00	4/28/2011 4:35:00PM
11D1129-04	MD-FILL		04/28/2011 11:00	4/28/2011 4:35:00PM
11D1129-05	MD-1-2		04/28/2011 11:00	4/28/2011 4:35:00PM
11D1129-06	MD-1-2		04/28/2011 11:00	4/28/2011 4:35:00PM
11D1129-07	MD-1-3		04/28/2011 11:00	4/28/2011 4:35:00PM
11D1129-08	MD-1-3		04/28/2011 11:00	4/28/2011 4:35:00PM
11D1129-09	MD-4-1		04/28/2011 11:00	4/28/2011 4:35:00PM
11D1129-10	MD-4-1		04/28/2011 11:00	4/28/2011 4:35:00PM
11D1129-11	MD-4-2		04/28/2011 11:00	4/28/2011 4:35:00PM
11D1129-12	MD-4-2		04/28/2011 11:00	4/28/2011 4:35:00PM
11D1129-13	MD-4-3		04/28/2011 11:00	4/28/2011 4:35:00PM
11D1129-14	MD-4-3		04/28/2011 11:00	4/28/2011 4:35:00PM

Friday, May 13, 2011



CASE NARRATIVE Date: Friday, May 13, 2011

Client: Environmental Restoration

Project: Markham Dump

Lab Order: 11D1129

The Matrix Spike and Matrix Spike Duplicate performed on the MD-CE sample failed the accuracy criteria for Mercury. This bias is due to the high indigenous analyte concentration (relative to the spike amount).

B - the Method Blank associated with the MD-4-3 sample contained Chromium at a level above the reporting limit. This is considered insignificant, as the concentration in the sample was more than ten-times that measured in the blank.

The Matrix Spike and Matrix Spike Duplicate performed on the MD-4-3 sample failed the accuracy criteria for Lead. This bias is due to the high indigenous analyte concentration (relative to the spike amount).



Client: Environmental Restoration

Client Project: Markham Dump

Client Sample ID: MD-CE Work Order/ID: 11D1129-01

 Sample Description:
 Sampled:
 04/28/2011 11:00

Matrix: Solid Received: 04/28/2011 16:35

Analyses	AT	Result	RL	Qual	Units	DF	Analyzed
		Method: SW-846	6 6010B			An	alyst: <b>SA</b>
Total Metals by ICP	F	Prep Method: SW846	3050B		F	Prep Date/	ime:05/11/2011 08:55
Arsenic	Α	7.4	0.49	r	ng/Kg	1	05/11/2011 18:16
Barium	Α	150	0.098	r	ng/Kg	1	05/11/2011 18:16
Cadmium	Α	3.7	0.098	r	ng/Kg	1	05/11/2011 18:16
Chromium	Α	33	0.15	r	ng/Kg	1	05/11/2011 18:16
Lead	Α	5000	0.37	r	ng/Kg	1	05/11/2011 18:16
Selenium	Α	l I	<b>VD</b> 1.5	r	ng/Kg	1	05/11/2011 18:16
Silver	A	0.49	0.49	r	ng/Kg	1	05/11/2011 18:16

 Method: SW-846 7471A
 Analyst: SA

 Total Mercury by CVAA
 Prep Method: SW-846 7471
 Prep Date/Time: 05/11/2011 09:30

 Mercury
 A
 1.2
 0.36
 mg/Kg
 10
 05/11/2011 17:17



Client: Environmental Restoration

Client Project: Markham Dump

Client Sample ID: MD-CE Work Order/ID: 11D1129-02

 Sample Description:
 Sampled:
 04/28/2011 11:00

 Matrix:
 Solid
 Received:
 04/28/2011 16:35

Analyses	AT Result	RL	Qual Units	DF	Analyzed
	Method	: 1311/7470A		An	alyst: <b>RPL</b>
TCLP Mercury by CVAA	Prep Method	d:/SW-846 7470		Prep Date/	Time: 05/13/2011 09:18
Mercury	Α	<b>ND</b> 0.0010	8 mg/L	1	05/13/2011 12:30

TCLP Metals by ICP	P	Method: 1311/601 Prep Method: /SW846 3		Analyst: <b>SA</b> Prep Date/Time: <b>05/13/2011 08:43</b>					
Arsenic	А	NE	0.0100	mg/L	1	05/13/2011 12:40			
Barium	Α	0.825	0.500	mg/L	1	05/13/2011 12:40			
Cadmium	А	0.0951	0.00200	mg/L	1	05/13/2011 12:40			
Chromium	А	0.00810	0.00300	mg/L	1	05/13/2011 12:40			
Lead	А	20.2	0.00750	mg/L	1	05/13/2011 12:40			
Selenium	Α	NE	0.0300	mg/L	1	05/13/2011 12:40			
Silver	А	NE	0.0100	mg/L	1	05/13/2011 12:40			



Client: Environmental Restoration

Client Project: Markham Dump

Client Sample ID: MD-FILL Work Order/ID: 11D1129-03

 Sample Description:
 Sampled:
 04/28/2011 11:00

Matrix: Solid Received: 04/28/2011 16:35

Analyses	AT	Result	RL	Qual	Units	DF	Analyzed
		Method: SW-84	6010B			Ana	alyst: <b>SA</b>
Total Metals by ICP	P	rep Method: SW846	3050B		1	Prep Date/1	ime:05/11/2011 08:55
Arsenic	A	5.9	0.49	m	g/Kg	1	05/11/2011 18:22
Barium	A	43	0.098	m	g/Kg	1	05/11/2011 18:22
Cadmium	A	0.23	0.098	m	g/Kg	1	05/11/2011 18:22
Chromium	A	14	0.15	m	g/Kg	1	05/11/2011 18:22
Lead	A	16	0.37	m	g/Kg	1	05/11/2011 18:22
Selenium	A	I	<b>VD</b> 1.5	m	g/Kg	1	05/11/2011 18:22
Silver	A	ı	<b>VD</b> 0.49	mg	g/Kg	1	05/11/2011 18:22

 Method: SW-846 7471A
 Analyst: SA

 Total Mercury by CVAA
 Prep Method: SW-846 7471
 Prep Date/Time: 05/11/2011 09:30

 Mercury
 A
 ND
 0.036
 mg/Kg
 1
 05/11/2011 16:34



Client: Environmental Restoration

Client Project: Markham Dump

Client Sample ID: MD-FILL Work Order/ID: 11D1129-04

 Sample Description:
 Sampled:
 04/28/2011 11:00

 Matrix:
 Solid
 Received:
 04/28/2011 16:35

Analyses	AT Result	RL	Qual I	Units DF	Analyzed
	Metho	d: <b>1311/7470A</b>		Ar	nalyst: <b>RPL</b>
TCLP Mercury by CVAA	Prep Metho	d:/ <b>SW-846 7470</b>		Prep Date/	Time: 05/13/2011 09:18
Mercury	Α	<b>ND</b> 0.001	100 mg/l	_ 1	05/13/2011 12:34

		Method: 1311/6010	В		Ar	nalyst: <b>SA</b>				
TCLP Metals by ICP	Р	rep Method:/SW846 3	010A		Prep Date/Time: 05/13/2011 08:43					
Arsenic	Α	ND	0.0100	mg/L	1	05/13/2011 12:46				
Barium	Α	ND	0.500	mg/L	1	05/13/2011 12:46				
Cadmium	Α	ND	0.00200	mg/L	1	05/13/2011 12:46				
Chromium	Α	ND	0.00300	mg/L	1	05/13/2011 12:46				
Lead	Α	ND	0.00750	mg/L	1	05/13/2011 12:46				
Selenium	Α	ND	0.0300	mg/L	1	05/13/2011 12:46				
Silver	А	ND	0.0100	mg/L	1	05/13/2011 12:46				



Client: Environmental Restoration

Client Project: Markham Dump

Client Sample ID: MD-1-2 Work Order/ID: 11D1129-05

 Sample Description:
 Sampled:
 04/28/2011 11:00

Matrix: Solid Received: 04/28/2011 16:35

Analyses	AT	Result	RL	Qual Un	its DF	Analyzed
		Method: SW-846 60	)10B		A	nalyst: <b>SA</b>
Total Metals by ICP	F	Prep Method: SW846 30	50B		Prep Date	/Time:05/11/2011 08:55
Arsenic	Α	18	0.50	mg/Kg	1	05/11/2011 18:27
Barium	А	950	0.099	mg/Kg	1	05/11/2011 18:27
Cadmium	Α	13	0.099	mg/Kg	1	05/11/2011 18:27
Chromium	Α	200	0.15	mg/Kg	1	05/11/2011 18:27
Lead	А	1900	0.37	mg/Kg	1	05/11/2011 18:27
Selenium	А	ND	1.5	mg/Kg	1	05/11/2011 18:27
Silver	Α	3.0	0.50	mg/Kg	1	05/11/2011 18:27
Silver	A	3.0 Method: <b>SW-846</b> 74		mg/kg	Α	nalyst: <b>SA</b>

 Method: SW-846 7471A
 Analyst: SA

 Total Mercury by CVAA
 Prep Method: SW-846 7471
 Prep Date/Time: 05/11/2011 09:30

 Mercury
 A
 1.7
 0.42
 mg/Kg
 10
 05/11/2011 17:19



Client: Environmental Restoration

Client Project: Markham Dump

 Client Sample ID:
 MD-1-2
 Work Order/ID:
 11D1129-06

 Sample Description:
 Sampled:
 04/28/2011 11:00

 Matrix:
 Solid
 Received:
 04/28/2011 16:35

Analyses	AT Result	RL	Qual Unit	s DF	Analyzed
	Method	Analyst: <b>RPL</b>			
TCLP Mercury by CVAA	Prep Method		Prep Date/1	Time: 05/13/2011 09:18	
Mercury	Α	<b>ND</b> 0.0010	00 mg/L	1	05/13/2011 12:35

		Method: 1311/6010		Analyst: <b>SA</b> Prep Date/Time: <b>05/13/2011 08:43</b>			
TCLP Metals by ICP	Р	rep Method:/SW846 3					
Arsenic	А	ND	0.0100	mg/L	1	05/13/2011 12:52	
Barium	А	1.16	0.500	mg/L	1	05/13/2011 12:52	
Cadmium	А	0.0852	0.00200	mg/L	1	05/13/2011 12:52	
Chromium	A	0.00580	0.00300	mg/L	1	05/13/2011 12:52	
Lead	Α	0.400	0.00750	mg/L	1	05/13/2011 12:52	
Selenium	А	ND	0.0300	mg/L	1	05/13/2011 12:52	
Silver	А	ND	0.0100	mg/L	1	05/13/2011 12:52	



Client: Environmental Restoration

Client Project: Markham Dump

Client Sample ID: MD-1-3 Work Order/ID: 11D1129-07

 Sample Description:
 Sampled:
 04/28/2011 11:00

Matrix: Solid Received: 04/28/2011 16:35

Analyses	AT	Result	RL	Qual	Units	DF	Analyzed
		Method: SW-846	6010B			An	alyst: <b>SA</b>
Total Metals by ICP	Р	rep Method: SW846	3050B			Prep Date/	Time: 05/11/2011 08:55
Arsenic	Α	11	0.48	mç	g/Kg	1	05/11/2011 18:33
Barium	A	350	0.095	mg	g/Kg	1	05/11/2011 18:33
Cadmium	A	17	0.095	mg	g/Kg	1	05/11/2011 18:33
Chromium	А	490	0.14	mg	g/Kg	1	05/11/2011 18:33
Lead	A	1800	0.36	mg	g/Kg	1	05/11/2011 18:33
Selenium	А	N	<b>D</b> 1.4	mg	g/Kg	1	05/11/2011 18:33
Silver	A	2.2	0.48	mg	g/Kg	1	05/11/2011 18:33

 Method: SW-846 7471A
 Analyst: SA

 Total Mercury by CVAA
 Prep Method: SW-846 7471
 Prep Date/Time: 05/11/2011 09:30

 Mercury
 A
 2.3
 0.30
 mg/Kg
 10
 05/11/2011 17:20



Client: Environmental Restoration

Client Project: Markham Dump

Client Sample ID: MD-1-3 Work Order/ID: 11D1129-08

 Sample Description:
 Sampled:
 04/28/2011 11:00

Matrix: Solid Received: 04/28/2011 16:35

Analyses	AT Result	RL	Qual Units	S DF	Analyzed
	Method: 13	Analyst: <b>RPL</b>			
TCLP Mercury by CVAA	Prep Method: /S		Prep Date/T	ime:05/13/2011 09:18	
Mercury	Α	<b>ND</b> 0.00100	mg/L	1	05/13/2011 12:36

			Analyst: <b>SA</b>			
CLP Metals by ICP	P	Prep Method:/SW846		Prep Date	Time: 05/13/2011 08:43	
Arsenic	A	NI	0.0100	mg/L	1	05/13/2011 12:57
Barium	A	1.09	0.500	mg/L	1	05/13/2011 12:57
Cadmium	A	0.178	0.00200	mg/L	1	05/13/2011 12:57
Chromium	A	0.00550	0.00300	mg/L	1	05/13/2011 12:57
Lead	А	2.08	0.00750	mg/L	1	05/13/2011 12:57
Selenium	А	NI	0.0300	mg/L	1	05/13/2011 12:57
Silver	А	NI	0.0100	mg/L	1	05/13/2011 12:57



Client: Environmental Restoration

Client Project: Markham Dump

Client Sample ID: MD-4-1 Work Order/ID: 11D1129-09

 Sample Description:
 Sampled:
 04/28/2011 11:00

Matrix: Solid Received: 04/28/2011 16:35

Analyses	AT	Result	RL	Qual	Units	DF	Analyzed
		Method: SW-846	6010B			Ana	alyst: <b>SA</b>
Total Metals by ICP	Р	Prep Method: SW846	3050B		F	Prep Date/1	ime:05/11/2011 08:55
Arsenic	A	10	0.49	m	g/Kg	1	05/11/2011 19:00
Barium	A	800	0.097	m	g/Kg	1	05/11/2011 19:00
Cadmium	A	11	0.097	m	g/Kg	1	05/11/2011 19:00
Chromium	A	120	0.15	m	g/Kg	1	05/11/2011 19:00
Lead	A	7500	0.36	m	g/Kg	1	05/11/2011 19:00
Selenium	A	ı	<b>VD</b> 1.5	m	g/Kg	1	05/11/2011 19:00
Silver	A	2.9	0.49	m	g/Kg	1	05/11/2011 19:00

 Method: SW-846 7471A
 Analyst: SA

 Total Mercury by CVAA
 Prep Method: SW-846 7471
 Prep Date/Time: 05/11/2011 09:30

 Mercury
 A
 0.49
 0.36
 mg/Kg
 10
 05/11/2011 17:21



Client: Environmental Restoration

Client Project: Markham Dump

 Client Sample ID:
 MD-4-1
 Work Order/ID:
 11D1129-10

 Sample Description:
 Sampled:
 04/28/2011 11:00

 Matrix:
 Solid
 Received:
 04/28/2011 16:35

Analyses	AT Result	RL	Qual Unit	s DF	Analyzed
	Method	Analyst: <b>RPL</b>			
TCLP Mercury by CVAA	Prep Method		Prep Date/	Time: 05/13/2011 09:18	
Mercury	Α	<b>ND</b> 0.0010	00 mg/L	1	05/13/2011 12:38

		Method: 1311/6010		Analyst: <b>SA</b> Prep Date/Time: <b>05/13/2011 08:43</b>			
TCLP Metals by ICP	Р	rep Method:/SW846 3					
Arsenic	А	ND	0.0100	mg/L	1	05/13/2011 13:03	
Barium	А	1.01	0.500	mg/L	1	05/13/2011 13:03	
Cadmium	А	0.159	0.00200	mg/L	1	05/13/2011 13:03	
Chromium	А	0.0219	0.00300	mg/L	1	05/13/2011 13:03	
Lead	А	51.8	0.00750	mg/L	1	05/13/2011 13:03	
Selenium	Α	ND	0.0300	mg/L	1	05/13/2011 13:03	
Silver	А	ND	0.0100	mg/L	1	05/13/2011 13:03	



Client: Environmental Restoration

Client Project: Markham Dump

Client Sample ID: MD-4-2 Work Order/ID: 11D1129-11

 Sample Description:
 Sampled:
 04/28/2011 11:00

Matrix: Solid Received: 04/28/2011 16:35

Analyses	AT	Result	RL	Qual	Units	DF	Analyzed
		Method: SW-84	6 6010B			Ana	alyst: <b>SA</b>
Total Metals by ICP	Р	rep Method: SW846	3050B		F	Prep Date/1	ime: 05/11/2011 08:55
Arsenic	A	9.4	0.46	m	g/Kg	1	05/11/2011 19:06
Barium	A	490	0.092	m	g/Kg	1	05/11/2011 19:06
Cadmium	A	8.4	0.092	m	g/Kg	1	05/11/2011 19:06
Chromium	A	80	0.14	m	g/Kg	1	05/11/2011 19:06
Lead	A	2500	0.34	m	g/Kg	1	05/11/2011 19:06
Selenium	A	j	ND 1.4	m	g/Kg	1	05/11/2011 19:06
Silver	A	1.3	0.46	m	g/Kg	1	05/11/2011 19:06

 Method: SW-846 7471A
 Analyst: SA

 Total Mercury by CVAA
 Prep Method: SW-846 7471
 Prep Date/Time: 05/11/2011 09:30

 Mercury
 A
 2.3
 0.35
 mg/Kg
 10
 05/11/2011 17:23



Client: **Environmental Restoration** 

**Client Project:** Markham Dump

MD-4-2 Work Order/ID: 11D1129-12 **Client Sample ID:** 

Sample Description:

04/28/2011 11:00 Sampled: 04/28/2011 16:35 Matrix: Solid Received:

RL Units **Analyses** AT Result Qual DF Analyzed Method: 1311/7470A Analyst: RPL

**TCLP Mercury by CVAA** Prep Method:/SW-846 7470 Prep Date/Time: 05/13/2011 09:18 Mercury Α ND 0.00100 mg/L 05/13/2011 12:39

Method: 1311/6010B Analyst: SA Prep Method:/SW846 3010A Prep Date/Time: 05/13/2011 08:43 **TCLP Metals by ICP** 0.0100 Arsenic Α ND mg/L 05/13/2011 13:09 0.933 0.500 Barium Α mg/L 05/13/2011 13:09 1 A 0.126 0.00200 Cadmium mg/L 1 05/13/2011 13:09 Chromium Α 0.0289 0.00300 mg/L 1 05/13/2011 13:09 Lead Α 13.2 0.00750 1 05/13/2011 13:09 mg/L Α 0.0300 Selenium ND mg/L 1 05/13/2011 13:09 Α ND 0.0100 05/13/2011 13:09 Silver mg/L



**Environmental Restoration** Client:

Markham Dump **Client Project:** 

MD-4-3 Work Order/ID: 11D1129-13 **Client Sample ID:** 

**Sample Description:** 

04/28/2011 11:00 Sampled: 04/28/2011 16:35 Matrix: Solid Received:

AT Result RL Qual Units DF **Analyses** Analyzed Method: SW-846 6010B Analyst: SA Prep Method: SW846 3050B Prep Date/Time: 05/11/2011 08:55 **Total Metals by ICP** 

Arsenic	Α	5.7	0.47	mg/Kg	1	05/11/2011 19:11
Barium	Α	1200	0.093	mg/Kg	1	05/11/2011 19:11
Cadmium	Α	21	0.093	mg/Kg	1	05/11/2011 19:11
Chromium	Α	51	0.14	mg/Kg	1	05/11/2011 19:11
Lead	Α	6800	0.35	mg/Kg	1	05/11/2011 19:11
Selenium	Α	ND	1.4	mg/Kg	1	05/11/2011 19:11
Silver	Α	2.0	0.47	mg/Kg	1	05/11/2011 19:11

Method: SW-846 7471A Analyst: SA **Total Mercury by CVAA** Prep Method: SW-846 7471 Prep Date/Time: 05/11/2011 09:30 A 1.9 0.37 mg/Kg 05/11/2011 17:24 Mercury



**Environmental Restoration** Client:

**Client Project:** Markham Dump

MD-4-3 Work Order/ID: 11D1129-14 **Client Sample ID:** 

Sample Description:

04/28/2011 11:00 Sampled: 04/28/2011 16:35 Matrix: Solid Received:

RL Units **Analyses** AT Result Qual DF Analyzed Method: 1311/7470A Analyst: RPL **TCLP Mercury by CVAA** Prep Method:/SW-846 7470 Prep Date/Time: 05/13/2011 09:30 Mercury Α ND 0.00100 mg/L 05/13/2011 12:58

Method: 1311/6010B Analyst: SA Prep Method:/SW846 3010A Prep Date/Time: 05/13/2011 08:43 **TCLP Metals by ICP** 0.0100 Arsenic Α ND mg/L 05/13/2011 13:46 1.62 0.500 Barium Α mg/L 05/13/2011 13:46 1 A 0.598 0.00200 Cadmium mg/L 1 05/13/2011 13:46 Chromium Α 0.0491 0.00300 В mg/L 1 05/13/2011 13:46 Lead Α 91.8 0.00750 1 05/13/2011 13:46 mg/L Α 0.0300 Selenium ND mg/L 1 05/13/2011 13:46 Α ND 0.0100 05/13/2011 13:46 Silver mg/L



#### FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

NA Not Analyzed

mg/L Milligrams per Liter (ppm)

mg/Kg Milligrams per Kilogram (ppm)

U Undetected

J Analyte concentration detected between RL and MDL (Metals / Organics)

В Detected in the associated method Blank at a concentration above the routine PQL/RL

D Dilution performed on sample

ND Not Detected at the Reporting Limit (or the Method Detection Limit, if used)

Ε Value above quantitation range

Н Analyte was prepared and/or analyzed outside of the analytical method holding time

Matrix Interference

R RPD outside accepted recovery limits S Spike recovery outside recovery limits

Surrogate Surr DF Dilution Factor Reporting Limit RL MDL Method Detection Limit NR Not Recovered

## **ANALYTE TYPES: (AT)**

A,B =Target Analyte Internal Standard М Summation Analyte

Surrogate

Tentatively Identified Compound (TIC, concentration estimated)

#### QC SAMPLE IDENTIFICATIONS

MBLK	=	Method Blank	ICSA	=	Interference Check Standard "A"
DUP	=	Method Duplicate	ICSAB	=	Interference Check Standard "AB"
LCS	=	Laboratory Control Sample	LCSD	=	Laboratory Control Sample Duplicate
BS	=	Method Blank Spike	BSD	=	Method Blank Spike Duplicate
MS	=	Matrix Spike	MSD	=	Matrix Spike Duplicate
ICB	=	Initial Calibration Blank	CCB	=	Continuing Calibration Blank
ICV	=	Initial Calibration Verification	CCV	=	Continuing Calibration Verification
PDS	=	Post Digestion Spike	SD	=	Serial Dilution
000		0 . 0	and the second		

OPR Ongoing Precision and Recovery Standard

## CERTIFICATIONS

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

The American Association for Laboratory Accreditation [A2LA] for Biological Testing, ISO/IEC 17025 (Certificate# 3045.01)

The American Association for Laboratory Accreditation [A2LA] for Environmental Department of Defense Testing, ISO/IEC 17025 (Certificate# 3045.02)

Illinois EPA for the analysis wastewater and solid waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (accreditation #200064)

Illinois Department of Public Health for the microbiological analysis of drinking water (registry #1755266)

Indiana DEM approved support laboratory for solid waste and wastewater analyses

Indiana SDH for the chemical analysis of drinking water (lab #C-45-03)

Indiana SDH for the microbiological analysis of drinking water (lab #M-45-8)

Kansas Department of Health and Environment for the analysis of drinking water, wastewater, and solid hazardous waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (Certificate No. E-10397)

Kentucky EPPC for the analysis of samples applicable to the Underground Storage Tank program (lab #75)

North Carolina DENR for the environmental analysis for NPDES effluent, surface water, groundwater, and pretreatment regulations(certificate #597)

Wisconsin DNR for the chemical analysis of wastewater and solid waste (lab #998036710)



# **COOLER INSPECTION**

COOLER INSPECTION	Date: Friday, May 13, 2011	
Client Name: Environmental Restoration	Date/Time Received: 04/28/2011 16:35	
Work Order Number: 11D1129	Received by: Dave Bryant	
Checklist completed by: 4/28/2011 5:03:00PM Dave Bryant	Reviewed by: <u>5/2/2011</u> KGF	
Carrier Name:	Client Delivered	
Cooler ID: Default Cooler	Container/Temp Blank Temperature: 4.00°C	
After-Hour Arrival? Shipping container/cooler in good condition? Custody seals intact on shipping container/cooler? Custody seals intact on sample containers? COC present? COC included sufficient client identification? COC included sufficient sample collector information? COC included a sample description? COC agrees with sample labels? COC identified the appropriate matrix? COC included date of collection? COC included time of collection? COC identified the appropriate number of containers? Samples in proper container/bottle? Sample containers intact?	Yes         No         ✓           Yes         No         Not Present           Yes         No         Not Present           Yes         No         Not Present           Yes         No         Not Present           Yes         No         No           Yes         No         Yes           Yes         No         No           Yes         No         No  <	
Sufficient sample volume for indicated test? All samples received within holding time?	Yes V No No	
If the samples are preserved, are the preservatives identified?	Yes 🗸 No 🔲	
If No, adjusted by?		
COC included the requested analyses? COC signed when relinquished and received? Samples received on ice? Samples properly preserved? Voa vials for aqueous samples have zero headspace? Cooler Comments:	Yes	

ANY "NO" EVALUATION (excluding After-Hour Receipt) REQUIRES CLIENT NOTIFICATION.



Sample ID	Client Sample ID	Comments
11D1129-01	MD-CE	
11D1129-02	MD-CE	
11D1129-03	MD-FILL	
11D1129-04	MD-FILL	
11D1129-05	MD-1-2	
11D1129-06	MD-1-2	
11D1129-07	MD-1-3	
11D1129-08	MD-1-3	
11D1129-09	MD-4-1	
11D1129-10	MD-4-1	
11D1129-11	MD-4-2	
11D1129-12	MD-4-2	
11D1129-13	MD-4-3	
11D1129-14	MD-4-3	

Chain of Custody	Prepared by: NE #W%				11 DIA99	CoCode (lab use only)		Template/Prelogin	Remarks/Containment Sample # (lab only)		1.0/50	70/50	81/20	01/60	<b>6</b> ////	<b>18/8</b>							Temn	Other	Condition (lab use only)		40,05	PH Checked NCF.
servative	D. G.					<u> </u> Š			Ref															Flow	SdII _		Courier Courier Bottles Received:	Time: 1635
Analysis/Container/Preservative		S]°	ot an	, Vi	717\	} (	<u></u>	121		X		又 又	2	Ŷ.	X	<u> </u>									Samples returned via:		Fed Ex Temp:	Date: 4/4/1
		573	pjal,	<u> </u>	30 S		No.		Containers	X		X 3	7	<u>پ</u>	\( \frac{1}{2} \)	<i>X</i>							Mater OT - Other					
rus P			4 Who	Des Chan IL	9		Date Results Needed:	oN :	Time	4 1100	0011	11 1000	10001	8	100	× 100			and the state of t	The second secon	The second secon		DW - Drinking Water		ture)		(nue)	(Signature)
Alternate billing information:			1 July 1018	City/State New	.  -	P.O. #			Depth Date	1563	)1-6Ph	84.43	13. J	<b>ポカ</b>	433	420		-			And the second s		MW - WasteWater		Received by: (Signature)	$\top$		Received Toy lab by 4
Alternate	ONLIC	1666 Fabick Drive Fenton, MO 63026 (636) 227-7477	) 227-6447 Report to:		MS 2PA	D#:	(Lab MUST Be Notified)	Same Day Next Day	Comp/Grab Matrix*														GW - Groundwater					Date: Time:
	ENVIRONMENTAL RESTORATIONLC	1666 F <sub>k</sub> Fenton, (636)	Fax (636,		Olient:	Site/Facility ID #:	Rush														The second secon	The state of the s	7	2	7300	3"	- X	ture)
				Project December	3 C 2 C 2 C 2 C 2 C 2 C 2 C 2 C 2 C 2 C		Collected by (signature):	ξ	racked off Ide	30-0k	NO- FULL	で-1-0Viff	E-1 - C 411	1-1- d W29	C-7 - CWev	5 mD- 4-3	alve	∍y			And the second s		*Maptrix	**************************************	Adquished by: (Signat		Helighushed by: (Signature)	RellAquished by: (Signature)



Work Order No.: 11D0912

May 5, 2011

Environmental Restoration 16660 South Canal Street South Holland, IL 60437-

Re: Markham Dump

Dear Toby Viehweg:

Microbac Laboratories, Inc. - Chicagoland Division received 2 sample(s) on 4/22/2011 1:40:00PM for the analyses presented in the following report as Work Order 11D0912.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Jeff Loewe, Division Manager at jeff.loewe@microbac.com. You may also contact Sean Hyde, Chief Operating Officer at sean.hyde@microbac.com or James Nokes, President at james.nokes@microbac.com.

H. Falmer

Sincerely,

Kevin Falvey Account Manager



Date:

#### **WORK ORDER SAMPLE SUMMARY**

Client: Environmental Restoration

**Project:** Markham Dump

Lab Order: 11D0912

Lab Sample ID	Client Sample ID	Tag Number	<b>Collection Date</b>	Date Received
11D0912-01	MD-SP-01		04/22/2011 11:00	4/22/2011 1:40:00PM
11D0912-02	MD-SP-01		04/22/2011 11:00	4/22/2011 1:40:00PM

Thursday, May 5, 2011



CASE NARRATIVE Date: Thursday, May 5, 2011

Client: Environmental Restoration

Project: Markham Dump

Lab Order: 11D0912

The Matrix Spike and Matrix Spike Duplicate performed on the MD-SP-01 sample failed the precision criteria for Phenolics. A Post Digestion Spike was performed and did not meet the acceptance criteria. This data is indicative of matrix interference.

B - the Method Blank associated with the MD-SP-01 sample contained Chromium and Lead at a level above the reporting limit. This is considered insignificant, as the concentration in the sample was more than ten-times that measured in the blank.



#### **Analytical Results**

Client: **Environmental Restoration** 

**Client Project:** Markham Dump

Client Sample ID: MD-SP-01 Work Order/ID: 11D0912-01

**Sample Description:** 

Sampled: 04/22/2011 11:00 Solid Received: 04/22/2011 13:40 Matrix:

Analyses	AT	Result	RL	Qual Unit	s DF	Analyzed
		Method: SW-846 808	2		Ar	nalyst: <b>cir</b>
Polychlorinated Biphenyls	F	Prep Method: SW846 355	0B		Prep Date	Time: 04/25/2011 12:26
Aroclor 1016	Α	ND	170	μg/Kg	5	04/26/2011 22:54
Aroclor 1221	А	ND	170	μg/Kg	5	04/26/2011 22:54
Aroclor 1232	А	ND	170	μg/Kg	5	04/26/2011 22:54
Aroclor 1242	Α	ND	170	μg/Kg	5	04/26/2011 22:54
Aroclor 1248	Α	700	170	μg/Kg	5	04/26/2011 22:54
Aroclor 1254	А	ND	170	μg/Kg	5	04/26/2011 22:54
Aroclor 1260	А	390	170	μg/Kg	5	04/26/2011 22:54
Aroclor 1262	А	ND	170	μg/Kg	5	04/26/2011 22:54
Aroclor 1268	Α	ND	170	μg/Kg	5	04/26/2011 22:54
Total PCB's	Α	1100	170	μg/Kg	5	04/26/2011 22:54
Surr: Decachlorobiphenyl	S	125.00	38-128	%REC	5	04/26/2011 22:54
Surr: Tetrachloro-m-xylene	S	100.00	40-130	%REC	5	04/26/2011 22:54

Date:

Thursday, May 5, 2011

		Method: 1311/8270		Analyst: <b>BR</b>				
TCLP Semivolatile Organic Compounds	Р	rep Method:/SW846 3	510		Prep Date/Time: 04/29/2011 08:56			
1,4-Dichlorobenzene	Α	ND	0.050	mg/L	1	05/03/2011 13:46		
2,4,5-Trichlorophenol	Α	ND	0.050	mg/L	1	05/03/2011 13:46		
2,4,6-Trichlorophenol	А	ND	0.050	mg/L	1	05/03/2011 13:46		
2,4-Dinitrotoluene	А	ND	0.050	mg/L	1	05/03/2011 13:46		
2-Methylphenol	А	ND	0.050	mg/L	1	05/03/2011 13:46		
3/4-Methylphenol	А	ND	0.050	mg/L	1	05/03/2011 13:46		
Hexachlorobenzene	А	ND	0.050	mg/L	1	05/03/2011 13:46		
Hexachlorobutadiene	А	ND	0.050	mg/L	1	05/03/2011 13:46		
Hexachloroethane	А	ND	0.050	mg/L	1	05/03/2011 13:46		
Nitrobenzene	А	ND	0.050	mg/L	1	05/03/2011 13:46		
Pentachlorophenol	Α	ND	0.25	mg/L	1	05/03/2011 13:46		
Pyridine	А	ND	0.050	mg/L	1	05/03/2011 13:46		
Total Cresol	М	ND	0.050	mg/L	1	05/03/2011 13:46		
Surr: 2,4,6-Tribromophenol	S	128.00	47.8-138	%REC	1	05/03/2011 13:46		
Surr: 2-Fluorobiphenyl	S	67.00	10-110	%REC	1	05/03/2011 13:46		
Surr: 2-Fluorophenol	S	80.20	10-110	%REC	1	05/03/2011 13:46		
Surr: Nitrobenzene-d5	S	86.80	10-110	%REC	1	05/03/2011 13:46		
Surr: Phenol-d5	S	86.80	10-60.8	S %REC	1	05/03/2011 13:46		
Surr: Terphenyl-d14	S	110.00	16.8-110	%REC	1	05/03/2011 13:46		

Method: 1311/8260B					Analyst: <b>jln</b>					
TCLP VOA Zero Head Extraction	Р	rep Method: SW-846 1	311/ <noprep></noprep>	F	Prep Date/Time: 04/26/2011 08:25					
1,1-Dichloroethene	Α	ND	0.050	mg/L	10	04/26/2011 12:44				

1,1-Dichioroethene	А	ND	0.050	mg/L	10	04/26/2011 12:44
1,2-Dichloroethane	Α	ND	0.050	mg/L	10	04/26/2011 12:44
2-Butanone	Α	ND	0.10	mg/L	10	04/26/2011 12:44
Benzene	Α	ND	0.050	mg/L	10	04/26/2011 12:44
Carbon tetrachloride	Α	ND	0.050	mg/L	10	04/26/2011 12:44
Chlorobenzene	Α	ND	0.050	mg/L	10	04/26/2011 12:44



**Analytical Results** Date: Thursday, May 5, 2011

Client: **Environmental Restoration** 

**Client Project:** Markham Dump

Client Sample ID: MD-SP-01 Work Order/ID: 11D0912-01

**Sample Description:** 

Sampled: 04/22/2011 11:00 Solid Received: 04/22/2011 13:40 Matrix:

			Receiv	ea:	04/22/2011 13.
AT	Result	RL	Qual Units	DF	Analyzed
	Method: 1311/8260B			Ana	alyst: <b>jin</b>
F	Prep Method: <b>SW-846 131</b>	1/ <noprep></noprep>		Prep Date/7	Time:04/26/2011 08:25
А	ND	0.050	mg/L	10	04/26/2011 12:44
А	ND	0.050	mg/L	10	04/26/2011 12:44
Α	ND	0.050	mg/L	10	04/26/2011 12:44
Α	ND	0.020	mg/L	10	04/26/2011 12:44
В	ND	0.10	mg/L	10	04/26/2011 12:44
S	84.30	74.5-132	%REC	10	04/26/2011 12:44
S	102.00	80-120	%REC	10	04/26/2011 12:44
S	101.00	80-120	%REC	10	04/26/2011 12:44
S	93.50	80-120	%REC	10	04/26/2011 12:44
					alyst: <b>SA</b>
	Prep Method:/SW-846 74				Time: 04/25/2011 09:25
A	ND	0.00100	mg/L	1	04/25/2011 14:18
	Method: 1311/6010B			Ana	alyst: <b>SA</b>
F	Prep Method:/SW846 301	0A		Prep Date/1	Fime: <b>04/25/2011 09:07</b>
А	ND	0.0100	mg/L	1	04/25/2011 14:59
А	0.960	0.500	mg/L	1	04/25/2011 14:59
А	0.181	0.00200	mg/L	1	04/25/2011 14:59
А	0.00590	0.00300	mg/L	1	04/25/2011 14:59
А	1.89	0.00750	mg/L	1	04/25/2011 14:59
А	ND	0.0300	mg/L	1	04/25/2011 14:59
Α	ND	0.0100	mg/L	1	04/25/2011 14:59
	Method: ASTM D92-	90 Modified			alyst: <b>TMG</b> Fime: <b>04/28/2011 17:26</b>
A	> 170	30	°F	1	04/28/2011 17:26
	Method: SW-846 909	5B			alyst: <b>ABG</b> Fime: <b>04/25/2011 12:35</b>
Α	Pass	0.0	Pass/Fail	1	04/25/2011 12:49
		5C		Ana	alyst: <b>ABG</b>
				Prep Date/7	Time: 04/25/2011 14:55
Α	7.58	2.00	pH Units	1	04/25/2011 15:03
			on		alyst: <b>EINIK</b> Fime: <b>04/27/2011 11:25</b>
					04/27/2011 14:21
A	J./	0.30	ilig/Ng	1	U4/21/2011 14.21
F	•		ation		alyst: <b>EINIK</b> Fime: <b>04/27/2011 12:15</b>
	F A A A A A A A A A A A A A A A A A A A	Prep Method: SW-846 131  A	Method: 1311/8260B Prep Method: SW-846 1311/ <noprep> A</noprep>	AT         Result         RL         Qual         Units           Method: 3111/8260B           Prep Method: SW-846 1311/ <noprep>           A         ND         0.050         mg/L           A         ND         0.050         mg/L           A         ND         0.050         mg/L           A         ND         0.050         mg/L           A         ND         0.020         mg/L           A         ND         0.020         mg/L           B         ND         0.10         mg/L           S         84.30         74.5-132         %REC           S         102.00         80-120         %REC           S         101.00         80-120         %REC           S         93.50         80-120         %REC           Method: 1311/7470A           Prep Method: 58W-846 7470           A         ND         0.00100         mg/L           Method: 1311/6010B         mg/L         Mg/L           Prep Method: 58W846 3010A         A         0.0960         0.500         mg/L           A         0.181         0.00200         mg/L         mg/L</noprep>	Method: 1311/8260B

Method: Chapter 7/9034 Prep Method: Solid Reactive Sulfide Distillation

Analyst: ABG Prep Date/Time: 04/27/2011 12:15



Analytical Results Date: Thursday, May 5, 2011

Client: Environmental Restoration

Client Project: Markham Dump

 Client Sample ID:
 MD-SP-01
 Work Order/ID:
 11D0912-01

Sample Description: Sampled: 04/22/2011 11:00

**Matrix:** Solid **Received:** 04/22/2011 13:40

AT Result RL Units DF **Analyses** Qual Analyzed Method: Chapter 7/9034 Analyst: ABG Prep Method: Solid Reactive Sulfide Distillation **Reactive Sulfide** Prep Date/Time: 04/27/2011 12:15 ND 04/27/2011 15:34 Reactive Sulfide Α mg/Kg



Analytical Results Date: Thursday, May 5, 2011

Client: Environmental Restoration

Client Project: Markham Dump

 Client Sample ID:
 MD-SP-01
 Work Order/ID:
 11D0912-02

 Sample Description:
 Sampled:
 04/22/2011
 11:00

Matrix: Solid Received: 04/22/2011 13:40

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed	
			Method: SW-846 60		Analyst: <b>SA</b>				
Total Metals by ICP			rep Method: SW846 30	50B	Prep Date/Time: 04/25/2011 10:55				
	Chromium	Α	130	1	3 B	mg/Kg	10	04/28/2011 0:02	
	Lead	Α	1800	3	3 B	mg/Kg	10	04/28/2011 0:02	



#### FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

NA Not Analyzed

mg/L Milligrams per Liter (ppm)

mg/Kg Milligrams per Kilogram (ppm) U Undetected

J

Analyte concentration detected between RL and MDL (Metals / Organics) В Detected in the associated method Blank at a concentration above the routine PQL/RL

D Dilution performed on sample

ND Not Detected at the Reporting Limit (or the Method Detection Limit, if used)

Ε Value above quantitation range

Н Analyte was prepared and/or analyzed outside of the analytical method holding time

Matrix Interference

R RPD outside accepted recovery limits S Spike recovery outside recovery limits

Surr Surrogate DF Dilution Factor Reporting Limit RL MDL Method Detection Limit NR Not Recovered

#### **ANALYTE TYPES: (AT)**

A,B =Target Analyte Internal Standard М Summation Analyte

Surrogate

Tentatively Identified Compound (TIC, concentration estimated)

#### QC SAMPLE IDENTIFICATIONS

MBLK	=	Method Blank	ICSA	=	Interference Check Standard "A"
DUP	=	Method Duplicate	ICSAB	=	Interference Check Standard "AB"
LCS	=	Laboratory Control Sample	LCSD	=	Laboratory Control Sample Duplicate
BS	=	Method Blank Spike	BSD	=	Method Blank Spike Duplicate
MS	=	Matrix Spike	MSD	=	Matrix Spike Duplicate
ICB	=	Initial Calibration Blank	CCB	=	Continuing Calibration Blank
ICV	=	Initial Calibration Verification	CCV	=	Continuing Calibration Verification
PDS	=	Post Digestion Spike	SD	=	Serial Dilution
000		0 . 0	and the second		

OPR Ongoing Precision and Recovery Standard

#### CERTIFICATIONS

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

The American Association for Laboratory Accreditation [A2LA] for Biological Testing, ISO/IEC 17025 (Certificate# 3045.01)

The American Association for Laboratory Accreditation [A2LA] for Environmental Department of Defense Testing, ISO/IEC 17025 (Certificate# 3045.02)

Illinois EPA for the analysis wastewater and solid waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (accreditation #200064)

Illinois Department of Public Health for the microbiological analysis of drinking water (registry #1755266)

Indiana DEM approved support laboratory for solid waste and wastewater analyses

Indiana SDH for the chemical analysis of drinking water (lab #C-45-03)

Indiana SDH for the microbiological analysis of drinking water (lab #M-45-8)

Kansas Department of Health and Environment for the analysis of drinking water, wastewater, and solid hazardous waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (Certificate No. E-10397)

Kentucky EPPC for the analysis of samples applicable to the Underground Storage Tank program (lab #75)

North Carolina DENR for the environmental analysis for NPDES effluent, surface water, groundwater, and pretreatment regulations(certificate #597)

Wisconsin DNR for the chemical analysis of wastewater and solid waste (lab #998036710)



COOLER INSPEC  Client Name: Environr			<b>Date:</b> Thursday, May 5, 2011 Date/Time Received: 04/22/2011 13:40							
Work Order Number:	11D0912		Received by:	Dave Bryant						
Checklist completed by:	4/22/2011 1:57:00PM	Dave Bryant	Reviewed by:	4/22/2011	KGF					
checkist completed by.	4/22/2011 1.37.001 WI		•	1/22/2011	KOI					
		Carrier Name: N	Aicrobac							
(	Cooler ID: Default Cooler		Container/T	emp Blank Tempe	erature: 5.00°C					
After-Hour Arrival?			Yes	No 🗸						
Shipping container/coo	ler in good condition?		Yes ✓	No 🗌	Not Present					
Custody seals intact or	n shipping container/cooler?	)	Yes	No	Not Present ✓					
Custody seals intact or	n sample containers?		Yes	No	Not Present ✓					
COC present?			Yes ✓	No						
COC included sufficier			Yes ✓	No						
	it sample collector informati	on?	Yes ✓	No 📙						
COC included a sampl	•		Yes ✓	No 📙						
COC agrees with samp			Yes ✓	No						
COC identified the app	-		Yes ✓	No						
COC included date of			Yes ✓	No						
COC included time of		_	Yes ✓	No						
	ropriate number of containe	ers?	Yes ✓	No						
Samples in proper con			Yes ✓	No						
Sample containers inta			Yes ✓	No						
Sufficient sample volur			Yes 🗸	No						
All samples received w	_		Yes 🗸	No						
If the samples are pres	served, are the preservative	s identified?	Yes 🗸	No						
	If No, adjuste	ed by?								
COC included the requ	ested analyses?		Yes 🗸	No 🗌						
COC signed when relir	equished and received?		Yes 🗸	No						
Samples received on it	ce?		Yes 🗸	No						
Samples properly pres	erved?		Yes ✓	No 🗌						
Voa vials for aqueous	samples have zero headspa	ace?	Yes	No N	o VOA vials submitted	✓				
Cooler Comments:										
ANY "NO" EVALUAT	ION (excluding After-Hour I	Receipt) REQUIRES C	CLIENT NOTIFICAT	ION.						
Sample ID C	lient Sample ID	Comments								
11D0912-01	ID-SP-01									
11D0912-02	ID-SP-01									

Report to: Toby Viethwise Collection  Email to: Toby Viethwise Collection  Collected: To fit wise Collection  Collected: No. Fix Months and Collected: No. Same Day  Email? No fix Months and Collected: No. Same Day  Email? No fix Months and Collected: No. Same Day  Email? No fix Months and Collected: No. Same Day  Email? No fix Months and Collected: No. Same Day  Matrix: Depth Date Trime No. Same Day  Matrix: Depth Date Trime No. Same Day  Matrix: Depth Date Trime On fix Months and Collected: No. Same Day  Matrix: Depth Date Trime No. Same Day  Matrix: Depth Date No. Same Day  Matrix: Depth Date No. Same Day  Matrix: Depth Date Trime No. Same Day  Matrix: Depth Date No. Same Day  Ma	Depth Date Heavils Nectorial No. The Containers of The Project Name of The Project Nam	Chain of Custo	Prepared by: The Huse			\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \\ \		CoCode (lab use only)	Template/Prelogin	Shipped Via:	Remarks/Containment Sample # (lab only)	0/10						2004	O dway	Flow Other	Condition (lab use only)	Courrier	
Report to:   Coby   Wathware   Email to:   The Wathware   City/State   City/State   City/State   City/State   City/State   City/State   City/State   City/State   City/State   Cothered:   Project Name:   P.O. #:   P.O. #:   P.O. #:   P.O. #:   P.O. #:   No.   Yes   O. manuarix   Depth   Date Results Needed:   No.   Yes   O. manuarix   Depth   Date Results Needed:   O. #:   No.   Yes   O. manuarix   Depth   Date   Trime   Commandative   O. Mark Day   P.A.   P.O. #:   No.   Yes   O. manuarix   Depth   Date	Factor   Control   Contr	Analysis/Container/Pre	genings'	44 k	13 13	25 - 25 - 25 - 25 - 25 - 25 - 25 - 25 -	94 	Hu!	त १८१ १८१		ر لا							3	D D	Samples returned via:	Carried of Gallier Via.	Fed Ex	Temp;
Report to:  Same Day Next Day Next Day Matrix*  Time:  Tim	TEONMENTAL   1666 Fabick Drive   Fention, MO 63026   (636) 227-6447   Report to:   Email			lathogo	がな なんこうしん かん	of Name:	•		No X Yes	e Time	Ì											Jre)	
	Fax (636)  Site/Facility ID  Comp/  C			Report to:	City/State Collected:		BO.			Depth	5							WW - WasteWater		Received by! (39)	で 引	e: Received by	>

Work Order No.: 11E0777



May 27, 2011

Environmental Restoration 16660 South Canal Street South Holland, IL 60437-

Re: Markham

Dear Toby Viehweg:

Microbac Laboratories, Inc. - Chicagoland Division received 20 sample(s) on 5/20/2011 10:00:00AM for the analyses presented in the following report as Work Order 11E0777.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Jeff Loewe, Division Manager at jeff.loewe@microbac.com. You may also contact Sean Hyde, Chief Operating Officer at sean.hyde@microbac.com or James Nokes, President at james.nokes@microbac.com.

H. Falmer

Sincerely,

Kevin Falvey Account Manager



Date:

# Revised 5/27/2011

Friday, May 27, 2011

#### **WORK ORDER SAMPLE SUMMARY**

Client: Environmental Restoration

**Project:** Markham **Lab Order:** 11E0777

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
11E0777-01	MD2-LK-10		05/18/2011 10:00	5/20/2011 10:00:00AM
11E0777-02	MD2-LK-15		05/18/2011 10:00	5/20/2011 10:00:00AM
11E0777-03	MD2-LK-20		05/18/2011 10:00	5/20/2011 10:00:00AM
11E0777-04	MD2-LK-25		05/18/2011 10:00	5/20/2011 10:00:00AM
11E0777-05	MD2-ID-10		05/18/2011 10:00	5/20/2011 10:00:00AM
11E0777-06	MD2-ID-15		05/18/2011 10:00	5/20/2011 10:00:00AM
11E0777-07	MD2-ID-20		05/18/2011 10:00	5/20/2011 10:00:00AM
11E0777-08	MD2-ID-25		05/18/2011 10:00	5/20/2011 10:00:00AM
11E0777-09	MD3-PL-10		05/18/2011 10:00	5/20/2011 10:00:00AM
11E0777-10	MD3-PL-15		05/18/2011 10:00	5/20/2011 10:00:00AM
11E0777-11	MD3-PL-20		05/18/2011 10:00	5/20/2011 10:00:00AM
11E0777-12	MD3-PL-25		05/18/2011 10:00	5/20/2011 10:00:00AM
11E0777-13	MD4-ID-10		05/18/2011 10:00	5/20/2011 10:00:00AM
11E0777-14	MD4-ID-15		05/18/2011 10:00	5/20/2011 10:00:00AM
11E0777-15	MD4-ID-20		05/18/2011 10:00	5/20/2011 10:00:00AM
11E0777-16	MD4-ID-25		05/18/2011 10:00	5/20/2011 10:00:00AM
11E0777-17	MD4-LK-10		05/18/2011 10:00	5/20/2011 10:00:00AM
11E0777-18	MD4-LK-15		05/18/2011 10:00	5/20/2011 10:00:00AM
11E0777-19	MD4-LK-20		05/18/2011 10:00	5/20/2011 10:00:00AM
11E0777-20	MD4-LK-25		05/18/2011 10:00	5/20/2011 10:00:00AM



CASE NARRATIVE Date: Friday, May 27, 2011

Client: Environmental Restoration

**Project:** Markham Lab Order: 11E0777

This report has been revised to include TCLP Chromium on samples # 9, 10, 11 and 12.



Analytical Results Date: Friday, May 27, 2011

Client: Environmental Restoration

Client Project: Markham

Client Sample ID: MD2-LK-10 Work Order/ID: 11E0777-01

Sample Description: Sampled: 05/18/2011 10:00

Matrix: Solid Sample Description. Sample Descr

Analyses AT Result RL Qual Units DF Analyzed

Method: 1311/6010B Analyst: SA

 Method: 1311/6010B
 Analyst: SA

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 05/24/2011 10:07

 Lead
 A 22.8
 0.00750
 mg/L
 1 05/25/2011 16:43



Analytical Results Date: Friday, May 27, 2011

Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 MD2-LK-15
 Work Order/ID:
 11E0777-02

Sample Description: Sampled: 05/18/2011 10:00

Matrix: Solid Sample Description. Sample Descr

Analyses AT Result RL Qual Units DF Analyzed

 Method: 1311/6010B
 Analyst: SA

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 05/24/2011 10:07

 Lead
 A 15.1
 0.00750
 mg/L
 1 05/25/2011 17:10



Analytical Results Date: Friday, May 27, 2011

Client: Environmental Restoration

Client Project: Markham

Client Sample ID: MD2-LK-20 Work Order/ID: 11E0777-03

Sample Description: Sampled: 05/18/2011 10:00

Matrix: Solid Received: 05/20/2011 10:00

Analyses AT Result RL Qual Units DF Analyzed

Method: 1311/6010B Analyst: SA

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 05/24/2011 10:07

 Lead
 A 0.969
 0.00750
 mg/L
 1 05/25/2011 17:15



Analytical Results Date: Friday, May 27, 2011

Client: Environmental Restoration

Client Project: Markham

Client Sample ID: MD2-LK-25 Work Order/ID: 11E0777-04

Sample Description: Sampled: 05/18/2011 10:00

Matrix: Solid Received: 05/20/2011 10:00

Analyses AT Result RL Qual Units DF Analyzed

Method: 1311/6010B Analyst: SA

TCLP Metals by ICP Prep Method:/SW846 3010A Prep Date/Time: 05/24/2011 10:07

Lead A 13.1 0.00750 mg/L 1 05/25/2011 17:21



Analytical Results Date: Friday, May 27, 2011

Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 MD2-ID-10
 Work Order/ID:
 11E0777-05

Sample Description: Sampled: 05/18/2011 10:00

Matrix: Solid Received: 05/20/2011 10:00

Analyses AT Result RL Qual Units DF Analyzed

Method: 1311/6010B Analyst: SA

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 05/24/2011 10:07

 Lead
 A 6.94
 0.00750
 mg/L
 1 05/25/2011 17:27



Analytical Results Date: Friday, May 27, 2011

Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 MD2-ID-15
 Work Order/ID:
 11E0777-06

Sample Description: Sampled: 05/18/2011 10:00

Matrix: Solid Received: 05/20/2011 10:00

Analyses AT Result RL Qual Units DF Analyzed

Method: 1311/6010B Analyst: SA

 TCLP Metals by ICP
 Prep Method:/SW846 3010A
 Prep Date/Time:05/24/2011 10:07

 Lead
 A
 0.00800
 0.00750
 mg/L
 1
 05/25/2011 17:32



Analytical Results Date: Friday, May 27, 2011

Client: Environmental Restoration

Client Project: Markham

Client Sample ID: MD2-ID-20 Work Order/ID: 11E0777-07

Sample Description: Sampled: 05/18/2011 10:00

Matrix: Solid Received: 05/20/2011 10:00

Analyses AT Result RL Qual Units DF Analyzed

Method: 1311/6010B Analyst: SA

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 05/24/2011 10:07

 Lead
 A
 ND
 0.00750
 mg/L
 1
 05/25/2011 17:38



Analytical Results Date: Friday, May 27, 2011

Client: Environmental Restoration

Client Project: Markham

Client Sample ID: MD2-ID-25 Work Order/ID: 11E0777-08

Sample Description: Sampled: 05/18/2011 10:00

Matrix: Solid Received: 05/20/2011 10:00

Analyses AT Result RL Qual Units DF Analyzed

Method: 1311/6010B Analyst: SA

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 05/24/2011 10:07

 Lead
 A
 ND
 0.00750
 mg/L
 1
 05/25/2011 17:43



Analytical Results Date: Friday, May 27, 2011

Client: Environmental Restoration

Client Project: Markham

Client Sample ID: MD3-PL-10 Work Order/ID: 11E0777-09

 Sample Description:
 Sampled:
 05/18/2011
 10:00

Matrix: Solid Received: 05/20/2011 10:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed	
			Method: 1311/6010	В			An	alyst: <b>SA</b>	
TCLP Metals by ICP			rep Method:/SW846 30	010A		Prep Date/Time: 05/24/2011 10:07			
	Chromium	Α	1.13	0.00300	r	ng/L	1	05/25/2011 17:49	
	Lead	Α	73.2	0.00750	r	ng/L	1	05/25/2011 17:49	



Analytical Results Date: Friday, May 27, 2011

Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 MD3-PL-15
 Work Order/ID:
 11E0777-10

Sample Description: Sampled: 05/18/2011 10:00

Matrix: Solid Received: 05/20/2011 10:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed	
			Method: 1311/6010	В			An	alyst: <b>SA</b>	
TCLP Metals by ICP			rep Method:/SW846 30	010A		Prep Date/Time: 05/24/2011 10:07			
	Chromium	Α	0.764	0.00300	r	ng/L	1	05/25/2011 17:54	
	Lead	Α	0.938	0.00750	r	ng/L	1	05/25/2011 17:54	



Analytical Results Date: Friday, May 27, 2011

Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 MD3-PL-20
 Work Order/ID:
 11E0777-11

Sample Description: Sampled: 05/18/2011 10:00

Matrix: Solid Received: 05/20/2011 10:00

Α	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed	
			Method: 1311/6010	В			An	alyst: <b>SA</b>	
TCLP Metals by ICP			Prep Method:/SW846 3	010A		Prep Date/Time: 05/24/2011 10:07			
	Chromium	Α	77.5	0.00300		mg/L	1	05/25/2011 18:00	
	Lead	Α	ND	0.00750		mg/L	1	05/25/2011 18:00	



Analytical Results Date: Friday, May 27, 2011

Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 MD3-PL-25
 Work Order/ID:
 11E0777-12

 Sample Description:
 Sampled:
 05/18/2011
 10:00

Matrix: Solid Received: 05/20/2011 10:00

AT Result RL Units DF **Analyses** Qual Analyzed Method: 1311/6010B Analyst: SA Prep Method:/SW846 3010A Prep Date/Time: 05/24/2011 10:07 **TCLP Metals by ICP** A 108 Chromium 0.00300 Ε mg/L 05/25/2011 18:27 A 1.29 0.00750 05/25/2011 18:27 Lead mg/L



Analytical Results Date: Friday, May 27, 2011

Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 MD4-ID-10
 Work Order/ID:
 11E0777-13

 Sample Description:
 Sampled:
 05/18/2011
 10:00

Matrix: Solid Received: 05/20/2011 10:00

Analyses AT Result RL Qual Units DF Analyzed

Method: 1311/6010B Analyst: SA

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 05/24/2011 10:07

 Lead
 A 11.8
 0.00750
 mg/L
 1 05/25/2011 18:33



Analytical Results Date: Friday, May 27, 2011

Client: Environmental Restoration

Client Project: Markham

Client Sample ID: MD4-ID-15 Work Order/ID: 11E0777-14

Sample Description: Sampled: 05/18/2011 10:00

Matrix: Solid Received: 05/20/2011 10:00

Analyses AT Result RL Qual Units DF Analyzed

Method: 1311/6010B Analyst: SA

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 05/24/2011 10:07

 Lead
 A 0.403
 0.00750
 mg/L
 1 05/25/2011 18:38



Analytical Results Date: Friday, May 27, 2011

Client: Environmental Restoration

Client Project: Markham

Client Sample ID: MD4-ID-20 Work Order/ID: 11E0777-15

Sample Description: Sampled: 05/18/2011 10:00

Matrix: Solid Received: 05/20/2011 10:00

Analyses AT Result RL Qual Units DF Analyzed

Method: 1311/6010B Analyst: SA

 TCLP Metals by ICP
 Prep Method:/SW846 3010A
 Prep Date/Time:05/24/2011 10:07

 Lead
 A
 ND
 0.00750
 mg/L
 1
 05/25/2011 18:44



Analytical Results Date: Friday, May 27, 2011

Client: Environmental Restoration

Client Project: Markham

 Client Sample ID:
 MD4-ID-25
 Work Order/ID:
 11E0777-16

Sample Description: Sampled: 05/18/2011 10:00

Matrix: Solid Received: 05/20/2011 10:00

Analyses AT Result RL Qual Units DF Analyzed

Method: 1311/6010B Analyst: SA

TCLP Metals by ICP Prep Method: /SW846 3010A Prep Date/Time: 05/24/2011 10:07

Lead A ND 0.00750 mg/L 1 05/25/2011 18:49



Analytical Results Date: Friday, May 27, 2011

Client: Environmental Restoration

Client Project: Markham

Client Sample ID: MD4-LK-10 Work Order/ID: 11E0777-17

Sample Description: Sampled: 05/18/2011 10:00

Matrix: Solid Received: 05/20/2011 10:00

Analyses AT Result RL Qual Units DF Analyzed

Method: 1311/6010B Analyst: SA

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 05/24/2011 10:07

 Lead
 A 14.1
 0.00750
 mg/L
 1 05/25/2011 18:55



Analytical Results Date: Friday, May 27, 2011

Client: Environmental Restoration

Client Project: Markham

Client Sample ID: MD4-LK-15 Work Order/ID: 11E0777-18

Sample Description: Sampled: 05/18/2011 10:00

Matrix: Solid Received: 05/20/2011 10:00

Analyses AT Result RL Qual Units DF Analyzed

Method: 1311/6010B Analyst: SA

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 05/24/2011 10:07

 Lead
 A 4.49
 0.00750
 mg/L
 1 05/25/2011 19:00



Analytical Results Date: Friday, May 27, 2011

Client: Environmental Restoration

Client Project: Markham

Client Sample ID: MD4-LK-20 Work Order/ID: 11E0777-19

Sample Description: Sampled: 05/18/2011 10:00

Matrix: Solid Received: 05/20/2011 10:00

Analyses AT Result RL Qual Units DF Analyzed

Method: 1311/6010B Analyst: SA

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 05/24/2011 10:07

 Lead
 A
 ND
 0.00750
 mg/L
 1
 05/25/2011 19:06



Analytical Results Date: Friday, May 27, 2011

Client: Environmental Restoration

Client Project: Markham

Client Sample ID: MD4-LK-25 Work Order/ID: 11E0777-20

Sample Description: Sampled: 05/18/2011 10:00

Matrix: Solid Received: 05/20/2011 10:00

Analyses AT Result RL Qual Units DF Analyzed

Method: 1311/6010B Analyst: SA

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 05/24/2011 10:07

 Lead
 A 0.171
 0.00750
 mg/L
 1 05/25/2011 19:11



#### FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

NA = Not Analyzed

mg/L = Milligrams per Liter (ppm)
mg/Kg = Milligrams per Kilogram (ppm)

U = Undetected

J = Analyte concentration detected between RL and MDL (Metals / Organics)

B = Detected in the associated method Blank at a concentration above the routine PQL/RL

D = Dilution performed on sample

ND = Not Detected at the Reporting Limit (or the Method Detection Limit, if used)

E = Value above quantitation range

H = Analyte was prepared and/or analyzed outside of the analytical method holding time

I = Matrix Interference

R = RPD outside accepted recovery limits
S = Spike recovery outside recovery limits

Surr = Surrogate
DF = Dilution Factor
RL = Reporting Limit
MDL = Method Detection Limit
NR = Not Recovered

#### **ANALYTE TYPES: (AT)**

A,B = Target Analyte
I = Internal Standard
M = Summation Analyte

S = Surrogate

T = Tentatively Identified Compound (TIC, concentration estimated)

#### **QC SAMPLE IDENTIFICATIONS**

MBLK	=	Method Blank	ICSA	=	Interference Check Standard "A"
DUP	=	Method Duplicate	ICSAB	=	Interference Check Standard "AB"
LCS	=	Laboratory Control Sample	LCSD	=	Laboratory Control Sample Duplicate
BS	=	Method Blank Spike	BSD	=	Method Blank Spike Duplicate
MS	=	Matrix Spike	MSD	=	Matrix Spike Duplicate
ICB	=	Initial Calibration Blank	CCB	=	Continuing Calibration Blank
ICV	=	Initial Calibration Verification	CCV	=	Continuing Calibration Verification
PDS	=	Post Digestion Spike	SD	=	Serial Dilution
OPR	=	Ongoing Precision and Recovery Stand	ard		

#### **CERTIFICATIONS**

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

The American Association for Laboratory Accreditation [A2LA] for Biological Testing, ISO/IEC 17025 (Certificate# 3045.01)

The American Association for Laboratory Accreditation [A2LA] for Environmental Department of Defense Testing, ISO/IEC 17025 (Certificate# 3045.02)

Illinois EPA for the analysis wastewater and solid waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (accreditation #200064)

Illinois Department of Public Health for the microbiological analysis of drinking water (registry #1755266)

Indiana DEM approved support laboratory for solid waste and wastewater analyses

Indiana SDH for the chemical analysis of drinking water (lab #C-45-03)

Indiana SDH for the microbiological analysis of drinking water (lab #M-45-8)

Kansas Department of Health and Environment for the analysis of drinking water, wastewater, and solid hazardous waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (Certificate No. E-10397)

Kentucky EPPC for the analysis of samples applicable to the Underground Storage Tank program (lab #75)

North Carolina DENR for the environmental analysis for NPDES effluent, surface water, groundwater, and pretreatment regulations(certificate #597)

Wisconsin DNR for the chemical analysis of wastewater and solid waste (lab #998036710)



# Revised 5/27/2011

Friday, May 27, 2011

### **COOLER INSPECTION**

Client Name: Environm	ental Restoration		Date/T	Time Rec	eived:	05/20/2011	10:00	
Work Order Number:	11E0777		Receiv	ved by:	Dave Br	yant		
Checklist completed by:	5/20/2011 10:56:00AM	Dave Bryant	Review	wed by:	5/20/20	11	KGF	
		Carrier Name:	Microbac					
Co	ooler ID: Default Cooler		Cont	tainer/Te	mp Blank	Temperatur	e: 5.00°C	
Custody seals intact on COC present? COC included sufficient COC included a sample COC agrees with sample COC identified the apprecoci included date of COC included time of COC included time of COC identified the apprecoci identified the apprecoci identified the apprecoci identified the apprecoci identified the apprecontainers in proper containers intacts ample containers intacts sufficient sample volume.	shipping container/cooler? sample containers?  client identification? sample collector information description? e labels? opriate matrix? oblection? oblection? opriate number of container ainer/bottle? ct? e for indicated test?	rs? identified?	Yes	< >	No N	Not	Present VPresent VPre	
COC included the reque COC signed when relind Samples received on ico Samples properly prese Voa vials for aqueous s Cooler Comments:	quished and received? e?	ce?	Yes Yes Yes Yes Yes	\ \ \ \	No No No No	No VO	A vials submitted	<b>V</b>

 $ANY \ "NO" \ EVALUATION \ (excluding \ After-Hour \ Receipt) \ REQUIRES \ CLIENT \ NOTIFICATION.$ 



Sample ID	Client Sample ID	Comments
11E0777-01	MD2-LK-10	
11E0777-02	MD2-LK-15	
11E0777-03	MD2-LK-20	
11E0777 <b>-</b> 04	MD2-LK-25	
11E0777-05	MD2-ID-10	
11E0777-06	MD2-ID-15	
11E0777-07	MD2-ID-20	
11E0777-08	MD2-ID-25	
11E0777-09	MD3-PL-10	
11E0777-10	MD3-PL-15	
11E0777-11	MD3-PL-20	
11E0777-12	MD3-PL-25	
11E0777-13	MD4-ID-10	
11E0777-14	MD4-ID-15	
11E0777-15	MD4-ID-20	
11E0777-16	MD4-ID-25	
11E0777-17	MD4-LK-10	
11E0777-18	MD4-LK-15	
11E0777-19	MD4-LK-20	
11E0777-20	MD4-LK-25	

Chain of Custody	Prepared by:				[1E0777	CoCode (Jab use only)		Template/Prelogin Shipped Via:	Remarks/Containment Sample # (lab only)			63	50	ŏ	9/10	30	50	*0			2000		Cond			pH Checked   NCF:
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Markham

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Work Order No.: 11D0305

April 15, 2011

Environmental Restoration 16660 South Canal Street South Holland, IL 60437-

Re: Markham, IL

Dear Toby Viehweg:

Microbac Laboratories, Inc. - Chicagoland Division received 26 sample(s) on 4/7/2011 2:45:00PM for the analyses presented in the following report as Work Order 11D0305.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Jeff Loewe, Division Manager at jeff.loewe@microbac.com. You may also contact Sean Hyde, Chief Operating Officer at sean.hyde@microbac.com or James Nokes, President at james.nokes@microbac.com.

H. Falmer

Sincerely,

Kevin Falvey Account Manager



Date:

## **WORK ORDER SAMPLE SUMMARY**

Client: Environmental Restoration

**Project:** Markham, IL **Lab Order:** 11D0305

Lab Sample ID	Client Sample ID	Tag Number	Collection Date	Date Received
11D0305-01	MD		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-02	MD		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-03	9-1-5		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-04	9-1-5		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-05	9-1-10		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-06	9-1-10		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-07	9-1-15		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-08	9-1-15		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-09	9-1-20		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-10	9-1-20		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-11	EC-5		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-12	EC-5		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-13	EC-10		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-14	EC-10		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-15	EC-15		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-16	EC-15		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-17	EC-20		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-18	EC-20		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-19	FF2-5		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-20	FF2-5		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-21	FF2-10		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-22	FF2-10		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-23	FF2-15		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-24	FF2-15		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-25	FF2-20		04/07/2011 09:00	4/7/2011 2:45:00PM
11D0305-26	FF2-20		04/07/2011 09:00	4/7/2011 2:45:00PM

Friday, April 15, 2011



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MD
 Work Order/ID:
 11D0305-01

Sample Description: Sampled: 04/07/2011 9:00

Matrix: Solid Received: 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

Method: SW-846 6010B Analyst: SA

 Total Metals by ICP
 Prep Method: SW846 3050B
 Prep Date/Time: 04/08/2011 08:46

 Lead
 A 1700
 0.37
 mg/Kg
 1 04/08/2011 22:52



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MD
 Work Order/ID:
 11D0305-02

Sample Description: Sampled: 04/07/2011 9:00

**Matrix:** Solid **Received:** 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

 Method: 1311/6010B
 Analyst: SA

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 04/12/2011 12:20

 Lead
 A
 2.98
 0.00750
 mg/L
 1
 04/13/2011 12:23



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 9-1-5
 Work Order/ID:
 11D0305-03

Sample Description: Sampled: 04/07/2011 9:00

Matrix: Solid Received: 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

Method: SW-846 6010B Analyst: SA

 Total Metals by ICP
 Prep Method: SW846 3050B
 Prep Date/Time: 04/08/2011 08:46

 Lead
 A
 2000
 0.37
 mg/Kg
 1
 04/08/2011 23:31



Client: Environmental Restoration

Client Project: Markham, IL

**Client Sample ID:** 9-1-5 **Work Order/ID:** 11D0305-04

Sample Description: Sampled: 04/07/2011 9:00

Matrix: Solid Received: 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

 Method: 1311/6010B
 Analyst: SA

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 04/

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 04/12/2011 12:20

 Lead
 A 0.675
 0.00750
 mg/L
 1 04/13/2011 16:36



Client: Environmental Restoration

Client Project: Markham, IL

**Client Sample ID:** 9-1-10 **Work Order/ID:** 11D0305-05

Sample Description: Sampled: 04/07/2011 9:00

 Matrix:
 Solid
 Received:
 04/07/2011
 14:45

AT Result RLQual Units DF **Analyses** Analyzed Method: SW-846 6010B Analyst: SA Prep Method: SW846 3050B **Total Metals by ICP** Prep Date/Time: 04/08/2011 08:46 A 1800 0.37 04/08/2011 23:37 Lead mg/Kg



Client: Environmental Restoration

Client Project: Markham, IL

**Client Sample ID:** 9-1-10 **Work Order/ID:** 11D0305-06

Sample Description: Sampled: 04/07/2011 9:00

Matrix: Solid Received: 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

 Method: 1311/6010B
 Analyst: SA

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 04/12/2011 12:20

 Lead
 A
 ND
 0.00750
 mg/L
 1
 04/13/2011 16:42



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 9-1-15
 Work Order/ID:
 11D0305-07

Sample Description: Sampled: 04/07/2011 9:00

Matrix: Solid Received: 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

Method: SW-846 6010B Analyst: SA

 Total Metals by ICP
 Prep Method: SW846 3050B
 Prep Date/Time: 04/08/2011 08:46

 Lead
 A 1900
 0.35
 mg/Kg
 1 04/08/2011 23:43



Client: Environmental Restoration

Client Project: Markham, IL

**Client Sample ID:** 9-1-15 **Work Order/ID:** 11D0305-08

Sample Description: Sampled: 04/07/2011 9:00

Matrix: Solid Received: 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

Method: 1311/6010B Analyst: SA

FCLP Metals by ICP Prep Method: /SW846 3010A Prep Date/Time: 04/12/2011 12:20

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 04/12/2011 12:20

 Lead
 A
 ND
 0.00750
 mg/L
 1
 04/13/2011 16:47



Client: Environmental Restoration

Client Project: Markham, IL

**Client Sample ID:** 9-1-20 **Work Order/ID:** 11D0305-09

 Sample Description:
 Sampled:
 04/07/2011
 9:00

Matrix: Solid Received: 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

Method: SW-846 6010B Analyst: SA

 Total Metals by ICP
 Prep Method: SW846 3050B
 Prep Date/Time: 04/08/2011 08:46

 Lead
 A 1400
 0.37
 mg/Kg
 1 04/08/2011 23:49



Client: Environmental Restoration

Client Project: Markham, IL

**Client Sample ID:** 9-1-20 **Work Order/ID:** 11D0305-10

Sample Description: Sampled: 04/07/2011 9:00

Matrix: Solid Received: 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

Method: 1311/6010B Analyst: SA

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 04/12/2011 12:20

 Lead
 A
 ND
 0.00750
 mg/L
 1
 04/13/2011 16:53



Client: Environmental Restoration

Client Project: Markham, IL

Client Sample ID: EC-5 Work Order/ID: 11D0305-11

Sample Description: Sampled: 04/07/2011 9:00

**Matrix:** Solid **Received:** 04/07/2011 14:45

AT Result RLQual Units DF **Analyses** Analyzed Method: SW-846 6010B Analyst: SA Prep Method: SW846 3050B **Total Metals by ICP** Prep Date/Time: 04/08/2011 08:46 A 1700 0.37 04/08/2011 23:55 Lead mg/Kg



Client: Environmental Restoration

Client Project: Markham, IL

Client Sample ID: EC-5 Work Order/ID: 11D0305-12

Sample Description: Sampled: 04/07/2011 9:00

Matrix: Solid Received: 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

 Method: 1311/6010B
 Analyst: SA

 ICLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 04/

 TCLP Metals by ICP
 Prep Method:/SW846 3010A
 Prep Date/Time: 04/12/2011 12:20

 Lead
 A 6.34
 0.00750
 mg/L
 1 04/13/2011 16:58



Client: Environmental Restoration

Client Project: Markham, IL

Client Sample ID: EC-10 Work Order/ID: 11D0305-13

Sample Description: Sampled: 04/07/2011 9:00

Matrix: Solid Received: 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

Method: SW-846 6010B Analyst: SA

 Total Metals by ICP
 Prep Method: SW846 3050B
 Prep Date/Time: 04/08/2011 08:46

 Lead
 A 1700
 0.38
 mg/Kg
 1 04/09/2011 0:01



Client: Environmental Restoration

Client Project: Markham, IL

Client Sample ID: EC-10 Work Order/ID: 11D0305-14

 Sample Description:
 Sampled:
 04/07/2011
 9:00

Matrix: Solid Received: 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

Method: 1311/6010B Analyst: SA

TCLP Metals by ICP Prep Method: /SW846 3010A Prep Date/Time: 04/

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 04/12/2011 12:20

 Lead
 A
 ND
 0.00750
 mg/L
 1
 04/13/2011 17:20



Client: Environmental Restoration

Client Project: Markham, IL

Client Sample ID: EC-15 Work Order/ID: 11D0305-15

 Sample Description:
 Sampled:
 04/07/2011
 9:00

Matrix: Solid Received: 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

Method: SW-846 6010B Analyst: SA

 Total Metals by ICP
 Prep Method: SW846 3050B
 Prep Date/Time: 04/08/2011 08:46

 Lead
 A 1500
 0.36
 mg/Kg
 1 04/09/2011 0:07



Client: Environmental Restoration

Client Project: Markham, IL

Client Sample ID: EC-15 Work Order/ID: 11D0305-16

Sample Description: Sampled: 04/07/2011 9:00

Matrix: Solid Received: 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

 Method: 1311/6010B
 Analyst: SA

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 04/12/2011 12:20

 Lead
 A
 ND
 0.00750
 mg/L
 1
 04/13/2011 17:26



Client: Environmental Restoration

Client Project: Markham, IL

Lead

Client Sample ID: EC-20 Work Order/ID: 11D0305-17

Sample Description: Sampled: 04/07/2011 9:00

Matrix: Solid Received: 04/07/2011 14:45

0.36

mg/Kg

 Analyses
 AT
 Result
 RL
 Qual
 Units
 DF
 Analyzed

 Method: SW-846 6010B
 Analyst: SA

 Total Metals by ICP
 Prep Method: SW846 3050B
 Prep Date/Time: 04/08/2011 08:46

A **2300** 

04/09/2011 0:12



Client: Environmental Restoration

Client Project: Markham, IL

Client Sample ID: EC-20 Work Order/ID: 11D0305-18

Sample Description: Sampled: 04/07/2011 9:00

Matrix: Solid Received: 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

 Method: 1311/6010B
 Analyst: SA

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 04/12/2011 12:20

 Lead
 A
 ND
 0.00750
 mg/L
 1
 04/13/2011 17:31



Client: Environmental Restoration

Client Project: Markham, IL

Client Sample ID: FF2-5 Work Order/ID: 11D0305-19

 Sample Description:
 Sampled:
 04/07/2011
 9:00

Matrix: Solid Received: 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

Method: SW-846 6010B Analyst: SA

 Total Metals by ICP
 Prep Method: SW846 3050B
 Prep Date/Time: 04/08/2011 08:46

 Lead
 A 2300
 0.37
 mg/Kg
 1 04/09/2011 0:18



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 FF2-5
 Work Order/ID:
 11D0305-20

Sample Description: Sampled: 04/07/2011 9:00

Matrix: Solid Received: 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

 Method: 1311/6010B
 Analyst: SA

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 04/12/2011 12:20

 Lead
 A 15.4
 0.00750
 mg/L
 1 04/13/2011 17:37



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 FF2-10
 Work Order/ID:
 11D0305-21

Sample Description: Sampled: 04/07/2011 9:00

Matrix: Solid Received: 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

Method: SW-846 6010B Analyst: SA

 Total Metals by ICP
 Prep Method: SW846 3050B
 Prep Date/Time: 04/08/2011 08:46

 Lead
 A 1500
 0.34
 mg/Kg
 1 04/09/2011 0:46



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 FF2-10
 Work Order/ID:
 11D0305-22

Sample Description: Sampled: 04/07/2011 9:00

Matrix: Solid Received: 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

 TCLP Metals by ICP
 Prep Method:/SW846 3010A
 Prep Date/Time: 04/12/2011 12:20

 Lead
 A 10.3
 0.00750
 mg/L
 1 04/13/2011 17:43

Method: 1311/6010B

Analyst: SA



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 FF2-15
 Work Order/ID:
 11D0305-23

Sample Description: Sampled: 04/07/2011 9:00

Matrix: Solid Received: 04/07/2011 14:45

 Analyses
 AT
 Result
 RL
 Qual
 Units
 DF
 Analyzed

 Method: SW-846 6010B
 Analyst: SA

 Total Metals by ICP
 Prep Method: SW846 3050B
 Prep Date/Time: 04/08/2011 08:46

Lead A 1400 0.35 mg/Kg 1 04/09/2011 0:52



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 FF2-15
 Work Order/ID:
 11D0305-24

Sample Description: Sampled: 04/07/2011 9:00

Matrix: Solid Received: 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

Method: 1311/6010B Analyst: SA

 TCLP Metals by ICP
 Prep Method:/SW846 3010A
 Prep Date/Time:04/12/2011 12:20

 Lead
 A
 ND
 0.00750
 mg/L
 1
 04/13/2011 17:48



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 FF2-20
 Work Order/ID:
 11D0305-25

Sample Description: Sampled: 04/07/2011 9:00

 Matrix:
 Solid
 Received:
 04/07/2011
 14:45

AT Result RLQual Units DF **Analyses** Analyzed Method: SW-846 6010B Analyst: SA Prep Method: SW846 3050B **Total Metals by ICP** Prep Date/Time: 04/08/2011 08:46 A 5200 0.38 04/09/2011 0:58 Lead mg/Kg



Client: Environmental Restoration

Client Project: Markham, IL

Client Sample ID: FF2-20 Work Order/ID: 11D0305-26

Sample Description: Sampled: 04/07/2011 9:00

Matrix: Solid Received: 04/07/2011 14:45

Analyses AT Result RL Qual Units DF Analyzed

 Method: 1311/6010B
 Analyst: SA

 TCLP Metals by ICP
 Prep Method: /SW846 3010A
 Prep Date/Time: 04/12/2011 12:20

 Lead
 A
 ND
 0.00750
 mg/L
 1
 04/13/2011 17:54



#### FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

NA Not Analyzed

mg/L Milligrams per Liter (ppm) Milligrams per Kilogram (ppm)

mg/Kg U Undetected

J Analyte concentration detected between RL and MDL (Metals / Organics)

В Detected in the associated method Blank at a concentration above the routine PQL/RL

D Dilution performed on sample

ND Not Detected at the Reporting Limit (or the Method Detection Limit, if used)

Ε Value above quantitation range

Н Analyte was prepared and/or analyzed outside of the analytical method holding time

Matrix Interference

R RPD outside accepted recovery limits S Spike recovery outside recovery limits

Surr Surrogate DF Dilution Factor Reporting Limit RL MDL Method Detection Limit NR Not Recovered

#### **ANALYTE TYPES: (AT)**

A,B =Target Analyte Internal Standard М Summation Analyte

Surrogate

Tentatively Identified Compound (TIC, concentration estimated)

#### QC SAMPLE IDENTIFICATIONS

MBLK	=	Method Blank	ICSA	=	Interference Check Standard "A"
DUP	=	Method Duplicate	<b>ICSAB</b>	=	Interference Check Standard "AB"
LCS	=	Laboratory Control Sample	LCSD	=	Laboratory Control Sample Duplicate
BS	=	Method Blank Spike	BSD	=	Method Blank Spike Duplicate
MS	=	Matrix Spike	MSD	=	Matrix Spike Duplicate
ICB	=	Initial Calibration Blank	CCB	=	Continuing Calibration Blank
ICV	=	Initial Calibration Verification	CCV	=	Continuing Calibration Verification
PDS	=	Post Digestion Spike	SD	=	Serial Dilution
OPR	=	Ongoing Precision and Recovery Stand	ard		

#### CERTIFICATIONS

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

The American Association for Laboratory Accreditation [A2LA] for Biological Testing, ISO/IEC 17025 (Certificate# 3045.01)

The American Association for Laboratory Accreditation [A2LA] for Environmental Department of Defense Testing, ISO/IEC 17025 (Certificate# 3045.02)

Illinois EPA for the analysis wastewater and solid waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (accreditation #200064)

Illinois Department of Public Health for the microbiological analysis of drinking water (registry #1755266)

Indiana DEM approved support laboratory for solid waste and wastewater analyses

Indiana SDH for the chemical analysis of drinking water (lab #C-45-03)

Indiana SDH for the microbiological analysis of drinking water (lab #M-45-8)

Kansas Department of Health and Environment for the analysis of drinking water, wastewater, and solid hazardous waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (Certificate No. E-10397)

Kentucky EPPC for the analysis of samples applicable to the Underground Storage Tank program (lab #75)

North Carolina DENR for the environmental analysis for NPDES effluent, surface water, groundwater, and pretreatment regulations(certificate #597)

Wisconsin DNR for the chemical analysis of wastewater and solid waste (lab #998036710)



#### **COOLER INSPECTION**

COOLER INSPECT	ΓΙΟΝ					Date:	Frida	y, April 15,	2011	
Client Name: Environm	nental Restoration		Б	Oate/T	ime Rec	eived:	04/07	/2011 14:45	5	
Work Order Number:	11D0305		R	Receiv	ed by:	Dave E	Bryant			
Checklist completed by:	4/7/2011 4:02:00PM	Dave Bryant	R	Reviev	wed by:	4/7/20	)11	I	KGF	
		Carrier Name:	Microbac							
C	ooler ID: Default Cooler			Cont	ainer/Te	mp Blank	Тетр	erature:	5.00°C	
After-Hour Arrival? Shipping container/cool Custody seals intact on	ler in good condition? shipping container/cooler?		Y	es es	✓ ✓	No No No	<b>√</b>	Not Prese	· 🛏	
Custody seals intact on COC present? COC included sufficient	t client identification?		Y Y	es es es	<b>✓</b>	No No No		Not Prese	ent 🗸	
COC included a sample COC agrees with samp	le labels?	n?	Y Y	es es es	\ \ \	No No No				
COC identified the appr COC included date of c COC included time of c	collection?		Y	es es es	<b>✓</b>	No No No	H			
COC identified the appr Samples in proper cont Sample containers intac		rs?	Y	es es	\ \ \	No No No	H			
Sufficient sample volum	ne for indicated test?		Y	es	V	No	П			
All samples received wi	itnin nolding time? erved, are the preservatives	identified?		es es	<b>✓</b>	No No	Н			
	If No, adjusted	l by?								
COC included the reque	•			es es	<b>√</b>	No No	Н			
Samples received on ic	e?			es		No				
Samples properly prese Voa vials for aqueous s	erved? samples have zero headspac	ce?		es es		No No		lo VOA via	ls submitted	<b>✓</b>
Cooler Comments:					_		_			

ANY "NO" EVALUATION (excluding After-Hour Receipt) REQUIRES CLIENT NOTIFICATION.



Sample ID	Client Sample ID	Comments
11D0305-01	MD	
11D0305-02	MD	
11D0305-03	9-1-5	
11D0305-04	9-1-5	
11D0305-05	9-1-10	
11D0305-06	9-1-10	
11D0305-07	9-1-15	
11D0305-08	9-1-15	
11D0305-09	9-1-20	
11D0305-10	9-1-20	
11D0305-11	EC-5	
11D0305-12	EC-5	
11D0305-13	EC-10	
11D0305-14	EC-10	
11D0305-15	EC-15	
11D0305-16	EC-15	
11D0305-17	EC-20	
11D0305-18	EC-20	
11D0305-19	FF2-5	
11D0305-20	FF2-5	
11D0305-21	FF2-10	
11D0305-22	FF2-10	
11D0305-23	FF2-15	
11D0305-24	FF2-15	
11D0305-25	FF2-20	
11D0305-26	FF2-20	



# **Analytical QC Summary**

Client: Environmental Restoration Metals - Quality Control

Work Order: 11D0305 Project: Markham, IL

Batch: B013297 Prep: SW846 3050B

Batch:	BU13297 Prep: SVV040 3030B										
Total Metals	by ICP										
Sample ID:	Blank (B013297-BLK1)	N	lethod:	SW-846	6010B		Prepped:	04/08	04/08/2011 08:46		
Source:							Analyzed:	04/08	21:34		
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual	
Lead	ND	0.38	mg/Kg								
Sample ID:	LCS (B013297-BS1)	N	lethod:	SW-846	6010B	!	Prepped:	04/08	3/2011 (	08:46	
Source:						4	Analyzed:	04/08	3/2011 2	21:40	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual	
Lead	142	0.75	mg/Kg	154.0		92.4	62.9-110		20		
Sample ID:	Matrix Spike (B013297-MS1)	M	lethod:	SW-846	6010B	ı	Prepped:	04/08	3/2011 (	08:46	
Source:	11D0305-01						Analyzed:	04/08	3/2011 2	22:58	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual	
Lead	2030	0.36	mg/Kg	97.09	1720	317	75-125		20	S	
Sample ID:	Matrix Spike Dup (B013297-MSD1)	M	lethod:	SW-846	6010B	ı	Prepped:	04/08	3/2011 (	08:46	
Source:	11D0305-01						Analyzed:	04/08	3/2011 2	23:26	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual	
Lead	1980	0.37	mg/Kg	98.04	1720	258	75-125	2.73	20	S	



# **Analytical QC Summary**

Client: Environmental Restoration TCLP Metals - Quality Control

Work Order: 11D0305 Project: Markham, IL

**Batch:** B013431 **Prep:** /SW846 3010A

TCLP Metals	by ICP										
Sample ID:	Blank (B013431-BLK1)		N	lethod:	1311/60	10B	ı	Prepped:			12:20
Source:							-	Analyzed:	04/13	3/2011	11:54
Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Lead		ND	0.00750	mg/L							
Sample ID:	LCS (B013431-BS1)		N	lethod:	1311/60	10B	ı	Prepped:	04/12	2/2011	12:20
Source:								Analyzed:	04/13	3/2011	12:00
Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Lead		1.96	0.00750	mg/L	2.000		98.0	80-120		0	
Sample ID:	Matrix Spike (B013431-	MS1)	N	lethod:	1311/60	10B	ı	Prepped:	04/12	2/2011	12:20
Source:	11D0308-01							Analyzed:	04/13	3/2011	12:34
Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Lead		1.97	0.00750	mg/L	2.000	ND	98.7	50-200		20	
Sample ID:	Matrix Spike Dup (B013	431-MSD1)	N	lethod:	1311/60	10B	ı	Prepped:	04/12	2/2011 ·	12:20
Source:	11D0308-01	,						Analyzed:	04/13	3/2011	12:40
Analyte		Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Lead		1.94	0.00750	mg/L	2.000	ND	97.2	50-200	1.53	20	
				Ü							



# **Analytical QC Summary**

**Environmental Restoration** Client: **TCLP Metals - Quality Control** 

Work Order: 11D0305 Project: Markham, IL

Batch:	B013432 <b>Prep</b> : /SW846 3010A									
TCLP Metals	by ICP									
Sample ID: Source:	Blank (B013432-BLK1)	N	lethod:	1311/60	10B		Prepped: Analyzed:		2/2011 1 3/2011 1	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Lead	ND	0.00750	mg/L							
Sample ID:	LCS (B013432-BS1)	N	lethod:	1311/60	10B		Prepped: Analyzed:		2/2011 1 3/2011 1	12:20 16:08
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Lead	2.06	0.00750	mg/L	2.000		103	80-120		0	
Sample ID:	Matrix Spike (B013432-MS1) 11D0298-20	N	lethod:	1311/60	10B		Prepped: Analyzed:		2/2011 1 3/2011 1	
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Lead	1.95	0.00750	mg/L	2.000	ND	97.4	50-200		20	
Sample ID:	Matrix Spike (B013432-MS2) 11D0391-08	N	lethod:	1311/60	10B		Prepped: Analyzed:		2/2011 1 3/2011 1	12:20 18:55
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Lead	2.10	0.00750	mg/L	2.000	ND	105	50-200		20	
Sample ID: Source:	Matrix Spike Dup (B013432-MSD1) 11D0298-20	N	lethod:	1311/60	10B		Prepped: Analyzed:		2/2011 1 3/2011 1	12:20 16:31
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Lead	1.92	0.00750	mg/L	2.000	ND	95.8	50-200	1.60	20	
Sample ID: Source:	Matrix Spike Dup (B013432-MSD2) 11D0391-08	N	lethod:	1311/60	10B		Prepped: Analyzed:		2/2011 1 3/2011 1	12:20 19:01
Analyte	Result	Limit	Units	Level	Result	%REC	Limits	RPD	Limit	Qual
Lead	2.04	0.00750	mg/L	2.000	ND	102	50-200	2.84	20	

	onain or custody Page	2.40						(valor east del)			10000L	it Sample # (lab_only)	70/10	70/80	05/100	02/08	04/10	61/11	13/19	4)/5/	12/12	07/20	2500	25/20		Sy Sy			Condition (lab use only)		MCF.
14	Chain	Prepared by: $\mathcal{D}$			en constitution de la constituti			CoCode		Template/Prelogin	Shipped Via:	Remarks/Containment									And the second s					Temp			Condition		1945 pH Checked NCF.
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Analysis/Container/Dresen/ailye																													via:	Š	
Analyzie/Con					C	OD Josep	' 7 20=1	d		· ·			X	人	X	<u> </u>	<u> </u>	시	1	38360		ر ي		<u>پ</u>					Samples returned via:	Teme:	Date: 4/2/1
					3				J.	<u>ىل</u> ق	Containers		<b>X</b>	X.	X	<b>X</b>	<b>X</b>	<u>ا</u>	4	K	4		1	<u>ک</u>		OT - Other					
				Vertwer	WE Cerllanon	WK Wam IL	Project Name: Dam D	18	Needed:	No Yes	No Yes	Date Time	- 00kO 日					mateu								DW - Drinking Water	V		A Control of the Cont	hature)	(Signature)
Alternate billing information:				Report to: 766 /	r	Collected:	Proje	P.O.		Same Day Email? Next Day	Two Day Fax?	Matrix* Depth Da	5													WW - WasteWater	01110	V	Time: Heceing and	Time: Received by//Sig/	Time: Received for lagroy (Signature)
4		RESTORATION	1666 Fabiok Drive Fenton, MO 63026 (636) 227-7477		3		Client:	Site/Facility ID #:	Rush (Lab MUST Be Notified)			Comp/Grab														GW - Groundwater	11 - 12	X Summy ()	La Cate:	1 A Date:	Date:
	11I ER		Kevin Fal	vey 1	en e	# (ption:	" 312446 6325	ated by:	0	107/2	N eol no b	Sample ID		グーン	41-10	2-1-2	4-1-30	27-5	0,-32	S		25.50	700 C	CC 220		*Matrix SS - Soil/Solid	Bemarks:/		Helpadished by: (Signature)	Refinguished by: (Signature)	Reliequished by: (Signature)



Work Order No.: 11E0515

May 26, 2011

Environmental Restoration 16660 South Canal Street South Holland, IL 60437-

Re: Markham Dump

Dear Toby Viehweg:

Microbac Laboratories, Inc. - Chicagoland Division received 10 sample(s) on 5/13/2011 10:15:00AM for the analyses presented in the following report as Work Order 11E0515.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Jeff Loewe, Division Manager at jeff.loewe@microbac.com. You may also contact Sean Hyde, Chief Operating Officer at sean.hyde@microbac.com or James Nokes, President at james.nokes@microbac.com.

H. Tolmes

Sincerely,

Kevin Falvey Account Manager



Date:

### **WORK ORDER SAMPLE SUMMARY**

Client: Environmental Restoration

**Project:** Markham Dump

Lab Order: 11E0515

Lab Sample ID	Client Sample ID MD-NHL-1	Tag Number	Collection Date 05/06/2011 10:00	Date Received 5/13/2011 10:15:00AM
11E0515-02	MD-BL-2		05/06/2011 10:00	5/13/2011 10:15:00AM
11E0515-03	MD-BG-3		05/06/2011 10:00	5/13/2011 10:15:00AM
11E0515-04	MD-AL-4		05/06/2011 10:00	5/13/2011 10:15:00AM
11E0515-05	MD-INK-5		05/06/2011 10:00	5/13/2011 10:15:00AM
11E0515-06	MD-OIL-6		05/06/2011 10:00	5/13/2011 10:15:00AM
11E0515-07	MD-BS-7		05/06/2011 10:00	5/13/2011 10:15:00AM
11E0515-08	MD-OXS-8		05/06/2011 10:00	5/13/2011 10:15:00AM
11E0515-09	MD-BAG-9		05/06/2011 10:00	5/13/2011 10:15:00AM
11E0515-10	MD-Chem-10		05/06/2011 10:00	5/13/2011 10:15:00AM

Thursday, May 26, 2011



CASE NARRATIVE Date: Thursday, May 26, 2011

Client: Environmental Restoration

Project: Markham Dump

Lab Order: 11E0515

B - the Method Blank associated with the MD-NHL-1, MD-BL-2, MD-AL-4, MD-BS-7, MD-OXS-8, and MD-Chem-10 samples contained Lead at a level above the reporting limit. This is considered insignificant, as the concentration in the sample was below the reporting limit.

Due to an error in the spike amount used in the LCS, MS, and MSD associated with the MD-INK-6 sample, the LCS failed the acceptance criteria with low bias for As Cr Se; the MS and MSD failed the accuracy criteria with low bias for As Sb Cr Se; the MSD failed the precision criteria for Ag Sb Cr. A Post Digestion Spike was analyzed and the acceptance criteria met.

The Matrix Spike Duplicate performed on the MD-BL-2 sample failed the precision criteria for Mercury. The accuracy criteria were met by both the MS and MSD. A Post Digestion Spike was analyzed and failed the acceptance criteria, indicating matrix interference.

H - sample received beyond the maximum allowable hold time for Reactive Sulfide.

The Laboratory Control Sample associated with the samples failed the precision criteria for Reactive Cyanide. This is considered insignificant, as the sample concentration was below the reporting limit.

B014810-MS1 and MSD1(Source sample=MB-BS-7) failed accuracy criteria with low bias for 1,1-Dichloroethene and other non-target analytes. Percent recoveries were good for all analytes for B014810-BS1.

Due to sample matrices, <30g of samples was used for MD-INK-5

B014861-MS1(Source sample=MD-INK-6) failed accuracy criteria with high bias for 1,4-Dichlorobenzene and other non-target analytes. MSD1 failed high for 1,2-Dichloroethane, 2-Butanone, surrogate 1,2-Dichloroethane-d4, and other non-target analytes.

Dilutions were performed on MD-NHL-1, MD-BG-3, MD-AL-4, and MD-INK-5 due to matrix issues, such as extreme pH and foaming.

S - The SVOA surrogate failure for sample MD-AL-4 is considered insignificant, as the bias was high yet the sample concentrations were below their respective reporting limits.



Client: **Environmental Restoration** 

**Client Project:** Markham Dump

Client Sample ID: MD-NHL-1 Work Order/ID: 11E0515-01

Date:

Thursday, May 26, 2011

**Sample Description:** 

Sampled: 05/06/2011 10:00 Matrix: Solid Received: 05/13/2011 10:15

Analyses	AT	Result	MDL	RL	Qual	Units	DF	Analyzed
		Method: 13	11/8270C				An	alyst: <b>BR</b>
CLP Semivolatile Organic Compounds						F	Prep Date/	Time: 05/18/2011 09:19
1,4-Dichlorobenzene	Α	ND	0.86	48		mg/L	20	05/20/2011 15:28
2,4,5-Trichlorophenol	Α	ND	1.4	48		mg/L	20	05/20/2011 15:28
2,4,6-Trichlorophenol	Α	ND	0.86	48		mg/L	20	05/20/2011 15:28
2,4-Dinitrotoluene	А	ND	0.77	48		mg/L	20	05/20/2011 15:28
2-Methylphenol	А	ND	0.67	48		mg/L	20	05/20/2011 15:28
3/4-Methylphenol	Α	ND	0.77	48		mg/L	20	05/20/2011 15:28
Hexachlorobenzene	А	ND	0.86	48		mg/L	20	05/20/2011 15:28
Hexachlorobutadiene	А	ND	0.86	48		mg/L	20	05/20/2011 15:28
Hexachloroethane	Α	ND	0.86	48		mg/L	20	05/20/2011 15:28
Nitrobenzene	Α	ND	0.96	48		mg/L	20	05/20/2011 15:28
Pentachlorophenol	Α	ND	1.2	240		mg/L	20	05/20/2011 15:28
Pyridine	Α	ND	3.2	48		mg/L	20	05/20/2011 15:28
Total Cresol	М	ND	1.3	48		mg/L	20	05/20/2011 15:28
Surr: 2,4,6-Tribromophenol	S	0.31		47.8-138	DS	%REC	20	05/20/2011 15:28
Surr: 2-Fluorobiphenyl	S	0.37		10-110	DS	%REC	20	05/20/2011 15:28
Surr: 2-Fluorophenol	S	0.00		10-110	D	%REC	20	05/20/2011 15:28
Surr: Nitrobenzene-d5	S	0.47		10-110	DS	%REC	20	05/20/2011 15:28
Surr: Phenol-d5	S	0.33		10-60.8	DS	%REC	20	05/20/2011 15:28
Surr: Terphenyl-d14	S	0.40		16.8-110	DS	%REC	20	05/20/2011 15:28

			Method: 13	11/8260B		Analyst: <b>jin</b>					
T	CLP VOA Zero Head Extraction						Prep Date	Time: 05/19/2011 08:38			
	1,1-Dichloroethene	Α	ND	3.4	10	mg/L	2000	05/19/2011 18:15			
	1,2-Dichloroethane	Α	ND	2.4	10	mg/L	2000	05/19/2011 18:15			
	2-Butanone	Α	ND	7.2	20	mg/L	2000	05/19/2011 18:15			
	Ponzono	Λ	ND	1.6	10	ma/l	2000	05/10/2011 19:15			

1,2 21011101001110110					····g· =		
2-Butanone	А	ND	7.2	20	mg/L	2000	05/19/2011 18:15
Benzene	А	ND	1.6	10	mg/L	2000	05/19/2011 18:15
Carbon tetrachloride	А	ND	3.4	10	mg/L	2000	05/19/2011 18:15
Chlorobenzene	А	ND	1.6	10	mg/L	2000	05/19/2011 18:15
Chloroform	А	ND	1.8	10	mg/L	2000	05/19/2011 18:15
Tetrachloroethene	А	ND	2.6	10	mg/L	2000	05/19/2011 18:15
Trichloroethene	А	ND	1.8	10	mg/L	2000	05/19/2011 18:15
Vinyl chloride	А	ND	1.8	4.0	mg/L	2000	05/19/2011 18:15
1,4-Dichlorobenzene	В	ND	1.4	20	mg/L	2000	05/19/2011 18:15
Surr: 1,2-Dichloroethane-d4	S	127.00		74.5-132	%REC	2000	05/19/2011 18:15
Surr: 4-Bromofluorobenzene	S	102.00		80-120	%REC	2000	05/19/2011 18:15
Surr: Dibromofluoromethane	S	106.00		80-120	%REC	2000	05/19/2011 18:15
Surr: Toluene-d8	S	99.80		80-120	%REC	2000	05/19/2011 18:15

		Method: 1311/7470	A		Ar	nalyst: <b>SA</b>
TCLP Mercury by CVAA					Prep Date	Time: 05/19/2011 09:10
Mercury	Α	ND	0.0125	mg/L	1	05/20/2011 12:19



Client: **Environmental Restoration** 

**Client Project:** Markham Dump

Client Sample ID: MD-NHL-1 Work Order/ID: 11E0515-01

**Sample Description:** 

Reactive Sulfide

Sampled: 05/06/2011 10:00 Solid Received: 05/13/2011 10:15 Matrix:

Analyses	AT	Result	MDL	RL	Qual	Units	DF	Analyzed
		Method: 13	11/6010B				An	alyst: <b>SA</b>
TCLP Metals by ICP							Prep Date/	Time: 05/18/2011 09:55
Arsenic	Α	ND		0.250		mg/L	1	05/18/2011 18:18
Barium	А	ND		12.5		mg/L	1	05/18/2011 18:18
Cadmium	А	ND		0.0500		mg/L	1	05/18/2011 18:18
Chromium	А	ND		0.0750		mg/L	1	05/18/2011 18:18
Lead	А	ND		0.188	В	mg/L	1	05/18/2011 18:18
Selenium	А	ND		0.750		mg/L	1	05/18/2011 18:18
Silver	Α	ND		0.250		mg/L	1	05/18/2011 18:18
		Method: SV	N-846 1010				An	alyst: <b>TMG</b>
gnitability (Closed Cup)							Prep Date/	Time: 05/20/2011 07:06
Ignitability	A	> 170		30		°F	1	05/20/2011 7:06
		Method: SV	N-846 9095E	3			Δn	alyst: ABG
Paint Filter		Wictilog. Ct	11-040 30301	•				Fime: 05/20/2011 14:15
Paint Filter	Α	Fail		0.0		Pass/Fail	1	05/20/2011 15:14
		Method: SV	N-846 90450	2			An	alyst: ABG
э <b>Н</b>								Time: 05/20/2011 14:15
рН	Α	7.33		2.00		pH Units	1	05/20/2011 15:11
		Method: SV	N-846 9066				An	alyst: <b>EINIK</b>
Total Phenolics							Prep Date/	Fime: 05/17/2011 11:30
Phenolics, Total Recoverable	Α	2.8		0.46		mg/Kg	1	05/18/2011 13:20
		Method: Cr	napter 7/901	4			An	alyst:GOEHL
Reactive Cyanide								Time: 05/20/2011 09:15
Reactive Cyanide	Α	ND		9.9		mg/Kg	1	05/20/2011 14:30
		Method: Cr	napter 7/903	34			An	alyst: ABG
Reactive Sulfide								Time: 05/20/2011 09:15

ND

9.9

mg/Kg

Α

05/20/2011 15:37



**Environmental Restoration** Client:

Markham Dump **Client Project:** 

MD-BL-2 Work Order/ID: 11E0515-02 **Client Sample ID:** 

Date:

Thursday, May 26, 2011

**Sample Description:** 

Sampled: 05/06/2011 10:00 Solid Received: 05/13/2011 10:15 Matrix:

Analyses	AT	Result	MDL	RL	Qual	Units	DF	Analyzed
		Method: 13	11/8270C					alyst:BR
TCLP Semivolatile Organic Compounds							Prep Date/1	ime:05/18/2011 09:19
1,4-Dichlorobenzene	Α	ND	0.0018	0.10		mg/L	1	05/20/2011 17:26
2,4,5-Trichlorophenol	Α	ND	0.0030	0.10		mg/L	1	05/20/2011 17:26
2,4,6-Trichlorophenol	А	ND	0.0018	0.10		mg/L	1	05/20/2011 17:26
2,4-Dinitrotoluene	А	ND	0.0016	0.10		mg/L	1	05/20/2011 17:26
2-Methylphenol	А	0.026	0.0014	0.10	J	mg/L	1	05/20/2011 17:26
3/4-Methylphenol	А	ND	0.0016	0.10		mg/L	1	05/20/2011 17:26
Hexachlorobenzene	А	ND	0.0018	0.10		mg/L	1	05/20/2011 17:26
Hexachlorobutadiene	Α	ND	0.0018	0.10		mg/L	1	05/20/2011 17:26
Hexachloroethane	Α	ND	0.0018	0.10		mg/L	1	05/20/2011 17:26
Nitrobenzene	Α	ND	0.0020	0.10		mg/L	1	05/20/2011 17:26
Pentachlorophenol	Α	ND	0.0026	0.50		mg/L	1	05/20/2011 17:26
Pyridine	Α	ND	0.0066	0.10		mg/L	1	05/20/2011 17:26
Total Cresol	М	0.026	0.0028	0.10	J	mg/L	1	05/20/2011 17:26
Surr: 2,4,6-Tribromophenol	S	59.80		47.8-138		%REC	1	05/20/2011 17:26
Surr: 2-Fluorobiphenyl	S	46.60		10-110		%REC	1	05/20/2011 17:26
Surr: 2-Fluorophenol	S	69.00		10-110		%REC	1	05/20/2011 17:26
Surr: Nitrobenzene-d5	S	50.00		10-110		%REC	1	05/20/2011 17:26
Surr: Phenol-d5	S	114.00		10-60.8	S	%REC	1	05/20/2011 17:26
Surr: Terphenyl-d14	S	57.30		16.8-110		%REC	1	05/20/2011 17:26

#### Method: 1311/8260B Analyst:jln TCI P VOA Zero Head Extraction Prep Date/Time: 05/20/2011 08:23

LP VOA Zero Head Extraction						Prep Date/	iiiie.05/20/2011 08:23
1,1-Dichloroethene	Α	ND	8.5	25	mg/L	5000	05/20/2011 13:22
1,2-Dichloroethane	Α	ND	6.0	25	mg/L	5000	05/20/2011 13:22
2-Butanone	Α	ND	18	50	mg/L	5000	05/20/2011 13:22
Benzene	Α	ND	4.0	25	mg/L	5000	05/20/2011 13:22
Carbon tetrachloride	A	ND	8.5	25	mg/L	5000	05/20/2011 13:22
Chlorobenzene	Α	ND	4.0	25	mg/L	5000	05/20/2011 13:22
Chloroform	Α	ND	4.5	25	mg/L	5000	05/20/2011 13:22
Tetrachloroethene	Α	ND	6.5	25	mg/L	5000	05/20/2011 13:22
Trichloroethene	Α	ND	4.5	25	mg/L	5000	05/20/2011 13:22
Vinyl chloride	Α	ND	4.5	10	mg/L	5000	05/20/2011 13:22
1,4-Dichlorobenzene	В	ND	3.5	50	mg/L	5000	05/20/2011 13:22
Surr: 1,2-Dichloroethane-d4	S	89.60		74.5-132	%REC	5000	05/20/2011 13:22
Surr: 4-Bromofluorobenzene	S	105.00		80-120	%REC	5000	05/20/2011 13:22
Surr: Dibromofluoromethane	S	87.70		80-120	%REC	5000	05/20/2011 13:22
Surr: Toluene-d8	S	106.00		80-120	%REC	5000	05/20/2011 13:22

TCLP Mercury by CVAA		Method: 1311/7470A		P		nalyst: <b>SA</b> /Time: <b>05/19/2011 09:10</b>
Mercury	Α	ND	0.0125	mg/L	1	05/20/2011 12:21



**Environmental Restoration** Client:

**Client Project:** Markham Dump

MD-BL-2 11E0515-02 **Client Sample ID:** Work Order/ID:

Sample Description:

Reactive Sulfide

Reactive Sulfide

Sampled: 05/06/2011 10:00 Matrix: Solid Received: 05/13/2011 10:15

ΑT Result MDL RL Qual Units DF **Analyses** Analyzed Method: 1311/6010B Analyst: SA **TCLP Metals by ICP** Prep Date/Time: 05/18/2011 09:55 Arsenic Α 7.70 0.250 mg/L 05/18/2011 18:23 Α ND 12.5 05/18/2011 18:23 Barium mg/L Cadmium Α 0.0675 0.0500 mg/L 05/18/2011 18:23 Α ND 0.0750 1 05/18/2011 18:23 Chromium mg/L ND 0.188 05/18/2011 18:23 Lead Α mg/L 1 0.805 0.750 05/18/2011 18:23 Selenium Α mg/L 1 1 05/18/2011 18:23 Silver Α 0.418 0.250 mg/L Method: SW-846 1010 Analyst: TMG Prep Date/Time: 05/20/2011 11:46 Ignitability (Closed Cup) A > 170 °F 05/20/2011 11:46 30 Ignitability Method: SW-846 9095B Analyst: ABG **Paint Filter** Prep Date/Time: 05/20/2011 14:15 Paint Filter A Fail 0.0 Pass/Fail 05/20/2011 15:14 Method: SW-846 9045C Analyst: ABG Prep Date/Time: 05/20/2011 14:15 рΗ 2.00 A 12.4 pH Units 05/20/2011 15:11 рΗ Method: SW-846 9066 Analyst: EINIK **Total Phenolics** Prep Date/Time: 05/17/2011 11:30 Α ND 0.47 05/18/2011 13:20 Phenolics, Total Recoverable mg/Kg Method: Chapter 7/9014 Analyst: GOEHL Prep Date/Time: 05/20/2011 09:15 **Reactive Cyanide** Α ND 10 05/20/2011 14:32 Reactive Cyanide mg/Kg Method: Chapter 7/9034 Analyst: ABG

ND

10 Н mg/Kg

Α

Prep Date/Time: 05/20/2011 09:15

05/20/2011 15:37



Client: **Environmental Restoration** 

**Client Project:** Markham Dump

MD-BG-3 Work Order/ID: 11E0515-03 **Client Sample ID:** 

Date:

Thursday, May 26, 2011

**Sample Description:** 

Surr: Terphenyl-d14

Sampled: 05/06/2011 10:00 Matrix: Solid 05/13/2011 10:15 Received:

Analyses	AT	Result	MDL	RL	Qual	Units	DF	Analyzed
		Method: 13	11/8270C				An	alyst: <b>BR</b>
TCLP Semivolatile Organic Compounds							Prep Date/	Time: 05/18/2011 09:19
1,4-Dichlorobenzene	А	ND	0.072	4.0		mg/L	20	05/20/2011 14:07
2,4,5-Trichlorophenol	А	ND	0.12	4.0		mg/L	20	05/20/2011 14:07
2,4,6-Trichlorophenol	Α	ND	0.072	4.0		mg/L	20	05/20/2011 14:07
2,4-Dinitrotoluene	Α	ND	0.064	4.0		mg/L	20	05/20/2011 14:07
2-Methylphenol	Α	ND	0.056	4.0		mg/L	20	05/20/2011 14:07
3/4-Methylphenol	Α	ND	0.064	4.0		mg/L	20	05/20/2011 14:07
Hexachlorobenzene	Α	ND	0.072	4.0		mg/L	20	05/20/2011 14:07
Hexachlorobutadiene	Α	ND	0.072	4.0		mg/L	20	05/20/2011 14:07
Hexachloroethane	А	ND	0.072	4.0		mg/L	20	05/20/2011 14:07
Nitrobenzene	Α	ND	0.080	4.0		mg/L	20	05/20/2011 14:07
Pentachlorophenol	Α	ND	0.10	20		mg/L	20	05/20/2011 14:07
Pyridine	А	ND	0.26	4.0		mg/L	20	05/20/2011 14:07
Total Cresol	М	ND	0.11	4.0		mg/L	20	05/20/2011 14:07
Surr: 2,4,6-Tribromophenol	S	3.19		47.8-138	DS	%REC	20	05/20/2011 14:07
Surr: 2-Fluorobiphenyl	S	3.31		10-110	DS	%REC	20	05/20/2011 14:07
Surr: 2-Fluorophenol	S	3.51		10-110	DS	%REC	20	05/20/2011 14:07
Surr: Nitrobenzene-d5	S	3.11		10-110	DS	%REC	20	05/20/2011 14:07
Surr: Phenol-d5	S	3.20		10-60.8	DS	%REC	20	05/20/2011 14:07

			Method: 13	311/8260B			Ar	nalyst: <b>jin</b>
T	CLP VOA Zero Head Extraction						Prep Date/	Time: 05/19/2011 08:38
	1,1-Dichloroethene	Α	ND	0.085	0.25	mg/L	50	05/19/2011 14:20
	1,2-Dichloroethane	Α	ND	0.060	0.25	mg/L	50	05/19/2011 14:20

16.8-110 DS

%REC

S 0.81

T, T-DICHIOTOETHENE	Α.	ND	0.065	0.25	IIIg/L	50	05/19/2011 14.20
1,2-Dichloroethane	Α	ND	0.060	0.25	mg/L	50	05/19/2011 14:20
2-Butanone	Α	ND	0.18	0.50	mg/L	50	05/19/2011 14:20
Benzene	Α	ND	0.040	0.25	mg/L	50	05/19/2011 14:20
Carbon tetrachloride	Α	ND	0.085	0.25	mg/L	50	05/19/2011 14:20
Chlorobenzene	Α	ND	0.040	0.25	mg/L	50	05/19/2011 14:20
Chloroform	Α	ND	0.045	0.25	mg/L	50	05/19/2011 14:20
Tetrachloroethene	Α	ND	0.065	0.25	mg/L	50	05/19/2011 14:20
Trichloroethene	Α	ND	0.045	0.25	mg/L	50	05/19/2011 14:20
Vinyl chloride	Α	ND	0.045	0.10	mg/L	50	05/19/2011 14:20
1,4-Dichlorobenzene	В	ND	0.035	0.50	mg/L	50	05/19/2011 14:20
Surr: 1,2-Dichloroethane-d4	S	125.00		74.5-132	%REC	50	05/19/2011 14:20
Surr: 4-Bromofluorobenzene	S	98.30		80-120	%REC	50	05/19/2011 14:20
Surr: Dibromofluoromethane	S	104.00		80-120	%REC	50	05/19/2011 14:20
Surr: Toluene-d8	S	99.00		80-120	%REC	50	05/19/2011 14:20

		Method: 131	1/7470A		Ar	nalyst:RPL
TCLP Mercury by CVAA					Prep Date	/Time: 05/18/2011 10:36
Mercury	Α	ND	0.00100	mg/L	1	05/18/2011 14:10

05/20/2011 14:07



Client: **Environmental Restoration** 

**Client Project:** Markham Dump

MD-BG-3 11E0515-03 **Client Sample ID:** Work Order/ID:

Sample Description:

**Reactive Cyanide** 

Sampled: 05/06/2011 10:00 Matrix: Solid Received: 05/13/2011 10:15

ΑT Result MDL RL Qual Units DF **Analyses** Analyzed Method: 1311/6010B Analyst: SA Prep Date/Time: 05/18/2011 09:55 **TCLP Metals by ICP** Arsenic Α ND 0.0100 mg/L 05/18/2011 16:28 0.500 Α ND 05/18/2011 16:28 Barium mg/L Cadmium Α ND 0.00200 mg/L 05/18/2011 16:28 Α ND 0.00300 1 05/18/2011 16:28 Chromium mg/L Α ND 0.00750 05/18/2011 16:28 Lead mg/L 1 Α ND 0.0300 05/18/2011 16:28 Selenium mg/L 1 Α 05/18/2011 16:28 Silver ND 0.0100 mg/L Method: ASTM D92-90 Modified Analyst: TMG Prep Date/Time: 05/20/2011 08:53 Ignitability (Open Cup) A > 170 °F 05/20/2011 8:53 30 Ignitability Method: SW-846 9095B Analyst: ABG **Paint Filter** Prep Date/Time: 05/20/2011 14:15 Paint Filter A Fail 0.0 Pass/Fail 05/20/2011 15:14 Method: SW-846 9045C Analyst: ABG Prep Date/Time: 05/20/2011 14:15 рΗ 2.00 A 9.17 pH Units 05/20/2011 15:11 рΗ Method: SW-846 9066 Analyst: EINIK **Total Phenolics** Prep Date/Time: 05/17/2011 11:30 A 68 0.47 05/18/2011 13:21 Phenolics, Total Recoverable mg/Kg

Reactive Cyanide	Α	ND	9.9	mg/Kg	1	05/20/2011 14:33
		Method: Chapter 7/90	034		Ar	nalyst: <b>ABG</b>
Reactive Sulfide					Prep Date/	/Time: 05/20/2011 09:15
Reactive Sulfide	Α	ND	9.9	H mg/Kg	1	05/20/2011 15:37

Method: Chapter 7/9014

Analyst: GOEHL Prep Date/Time: 05/20/2011 09:15



Client: **Environmental Restoration** 

**Client Project:** Markham Dump

MD-AL-4 Work Order/ID: 11E0515-04 **Client Sample ID:** 

Date:

Thursday, May 26, 2011

**Sample Description:** 

Sampled: 05/06/2011 10:00 Solid 05/13/2011 10:15 Matrix: Received:

Analyses	AT	Result	MDL	RL	Qual	Units	DF	Analyzed
		Method: 13	11/8270C				An	alyst:BR
TCLP Semivolatile Organic Compounds							Prep Date/	Time: 05/20/2011 00:00
1,4-Dichlorobenzene	Α	ND	90	50000		mg/L	100	05/23/2011 13:53
2,4,5-Trichlorophenol	Α	ND	150	50000		mg/L	100	05/23/2011 13:53
2,4,6-Trichlorophenol	А	ND	90	50000		mg/L	100	05/23/2011 13:53
2,4-Dinitrotoluene	А	ND	80	50000		mg/L	100	05/23/2011 13:53
2-Methylphenol	А	ND	70	50000		mg/L	100	05/23/2011 13:53
3/4-Methylphenol	А	ND	80	50000		mg/L	100	05/23/2011 13:53
Hexachlorobenzene	А	ND	90	50000		mg/L	100	05/23/2011 13:53
Hexachlorobutadiene	А	ND	90	50000		mg/L	100	05/23/2011 13:53
Hexachloroethane	Α	ND	90	50000		mg/L	100	05/23/2011 13:53
Nitrobenzene	Α	ND	100	50000		mg/L	100	05/23/2011 13:53
Pentachlorophenol	Α	ND	130	250000		mg/L	100	05/23/2011 13:53
Pyridine	Α	ND	300	50000		mg/L	100	05/23/2011 13:53
Total Cresol	М	ND	140	50000		mg/L	100	05/23/2011 13:53
Surr: 2,4,6-Tribromophenol	S	96.60		47.8-138		%REC	100	05/23/2011 13:53
Surr: 2-Fluorobiphenyl	S	150.00		10-110	S	%REC	100	05/23/2011 13:53
Surr: 2-Fluorophenol	S	90.10		10-110		%REC	100	05/23/2011 13:53
Surr: Nitrobenzene-d5	S	139.00		10-110	S	%REC	100	05/23/2011 13:53
Surr: Phenol-d5	S	87.60		10-60.8	S	%REC	100	05/23/2011 13:53
Surr: Terphenyl-d14	S	180.00		16.8-110	S	%REC	100	05/23/2011 13:53

	Method: 1311/8260B	Analyst: <b>jin</b>
TCLP VOA Zero Head Extraction		Prep Date/Time: 05/19/2011 08:38

Α	ND	8.5	25	mg/L	5000	05/19/2011 17:46
Α	ND	6.0	25	mg/L	5000	05/19/2011 17:46
Α	ND	18	50	mg/L	5000	05/19/2011 17:46
Α	ND	4.0	25	mg/L	5000	05/19/2011 17:46
Α	ND	8.5	25	mg/L	5000	05/19/2011 17:46
Α	ND	4.0	25	mg/L	5000	05/19/2011 17:46
Α	ND	4.5	25	mg/L	5000	05/19/2011 17:46
Α	ND	6.5	25	mg/L	5000	05/19/2011 17:46
Α	ND	4.5	25	mg/L	5000	05/19/2011 17:46
Α	ND	4.5	10	mg/L	5000	05/19/2011 17:46
В	ND	3.5	50	mg/L	5000	05/19/2011 17:46
S	128.00		74.5-132	%REC	5000	05/19/2011 17:46
S	100.00		80-120	%REC	5000	05/19/2011 17:46
S	102.00		80-120	%REC	5000	05/19/2011 17:46
S	100.00		80-120	%REC	5000	05/19/2011 17:46
	A A A A A A B S S S	A ND	A ND 6.0 A ND 18 A ND 4.0 A ND 4.0 A ND 4.0 A ND 4.5 A ND 4.5 A ND 4.5 A ND 4.5 B ND 3.5 S 128.00 S 100.00 S 102.00	A ND 6.0 25 A ND 18 50 A ND 4.0 25 A ND 4.0 25 A ND 4.0 25 A ND 4.5 25 A ND 6.5 25 A ND 4.5 10 B ND 3.5 50 S 128.00 74.5-132 S 100.00 80-120	A ND 6.0 25 mg/L  A ND 18 50 mg/L  A ND 4.0 25 mg/L  A ND 4.5 25 mg/L  A ND 6.5 25 mg/L  A ND 4.5 25 mg/L  A ND 4.5 25 mg/L  A ND 4.5 25 mg/L  S 128.00 74.5-132 %REC  S 102.00 80-120 %REC	A         ND         6.0         25         mg/L         5000           A         ND         18         50         mg/L         5000           A         ND         4.0         25         mg/L         5000           A         ND         4.0         25         mg/L         5000           A         ND         4.5         25         mg/L         5000           A         ND         6.5         25         mg/L         5000           A         ND         4.5         25         mg/L         5000           A         ND         4.5         10         mg/L         5000           B         ND         3.5         50         mg/L         5000           S         128.00         74.5-132         %REC         5000           S         100.00         80-120         %REC         5000

Method: 1311/7470A Analyst: SA Prep Date/Time: 05/19/2011 09:10 **TCLP Mercury by CVAA** Α ND 0.00250 05/20/2011 12:42 mg/L Mercury



Client: **Environmental Restoration** 

Markham Dump **Client Project:** 

MD-AL-4 Work Order/ID: 11E0515-04 **Client Sample ID:** 

**Sample Description:** 

05/06/2011 10:00 Sampled:

Matrix: Solid						Receive	ed:	05/13/2011 10:15
Analyses	AT	Result	MDL	RL	Qual	Units	DF	Analyzed
		Method: 13	311/6010B				Ana	alyst: <b>SA</b>
TCLP Metals by ICP							Prep Date/1	ime:05/18/2011 09:55
Arsenic	A	ND		0.0500		mg/L	1	05/18/2011 18:29
Barium	A	ND		2.50		mg/L	1	05/18/2011 18:29
Cadmium	А	ND		0.0100		mg/L	1	05/18/2011 18:29
Chromium	Α	ND		0.0150		mg/L	1	05/18/2011 18:29
Lead	Α	ND		0.0375	В	mg/L	1	05/18/2011 18:29
Selenium	Α	0.816		0.150		mg/L	1	05/18/2011 18:29
Silver	Α	ND		0.0500		mg/L	1	05/18/2011 18:29
Ignitability (Closed Cup)		Method: SI	N-846 1010					alyst: <b>TMG</b> Time: <b>05/20/2011 08:57</b>
Ignitability	A	> 170		30		°F	1	05/20/2011 8:57
Paint Filter		Method: SI	W-846 9095B					alyst: <b>ABG</b> īme: <b>05/20/2011 14:15</b>
Paint Filter	A	Fail		0.0		Pass/Fail	1	05/20/2011 15:14
nU.		Method: SI	N-846 9045C					alyst: <b>ABG</b> Time: <b>05/20/2011 14:15</b>
pH pH	А	< 2.00		2.00		pH Units	1	05/20/2011 15:11
Total Phenolics		Method: SI	N-846 9066					alyst: EINIK Time: 05/17/2011 11:30
	Δ.	20		0.40			riep Date/	
Phenolics, Total Recoverable	A	29		0.48		mg/Kg	1	05/18/2011 13:36



Client: **Environmental Restoration** 

**Client Project:** Markham Dump

Client Sample ID: MD-INK-5 Work Order/ID: 11E0515-05

Date:

**Sample Description:** 

Sampled: 05/06/2011 10:00 Solid Received: 05/13/2011 10:15 Matrix:

Analyses	AT	Result	MDL R	L	Qual	Units	DF	Analyzed
		Method: SI	W-846 8082				Ana	alyst: <b>cir</b>
Polychlorinated Biphenyls							Prep Date/1	Time: 05/17/2011 09:13
Aroclor 1016	Α	ND		980		μg/Kg	1	05/20/2011 4:31
Aroclor 1221	Α	ND		980		μg/Kg	1	05/20/2011 4:31
Aroclor 1232	Α	ND		980		μg/Kg	1	05/20/2011 4:31
Aroclor 1242	А	ND		980		μg/Kg	1	05/20/2011 4:31
Aroclor 1248	Α	ND		980		μg/Kg	1	05/20/2011 4:31
Aroclor 1254	Α	ND		980		μg/Kg	1	05/20/2011 4:31
Aroclor 1260	А	ND		980		μg/Kg	1	05/20/2011 4:31
Aroclor 1262	А	ND		980		μg/Kg	1	05/20/2011 4:31
Aroclor 1268	A	ND		980		μg/Kg	1	05/20/2011 4:31
Total PCB's	А	ND		980		μg/Kg	1	05/20/2011 4:31
Surr: Decachlorobiphenyl	S	80.00	38	-128		%REC	1	05/20/2011 4:31
Surr: Tetrachloro-m-xylene	S	90.00	40	-130		%REC	1	05/20/2011 4:31

### Analyst: BR

Thursday, May 26, 2011

LP Semivolatile Organic Compounds	•					Prep Date/	Time: 05/18/2011 09:1
1,4-Dichlorobenzene	А	ND	0.0036	0.20	mg/L	1	05/20/2011 17:46
2,4,5-Trichlorophenol	А	ND	0.0060	0.20	mg/L	1	05/20/2011 17:46
2,4,6-Trichlorophenol	А	ND	0.0036	0.20	mg/L	1	05/20/2011 17:46
2,4-Dinitrotoluene	Α	ND	0.0032	0.20	mg/L	1	05/20/2011 17:46
2-Methylphenol	Α	ND	0.0028	0.20	mg/L	1	05/20/2011 17:46
3/4-Methylphenol	А	ND	0.0032	0.20	mg/L	1	05/20/2011 17:46
Hexachlorobenzene	Α	ND	0.0036	0.20	mg/L	1	05/20/2011 17:46
Hexachlorobutadiene	А	ND	0.0036	0.20	mg/L	1	05/20/2011 17:40
Hexachloroethane	Α	ND	0.0036	0.20	mg/L	1	05/20/2011 17:40
Nitrobenzene	Α	ND	0.0040	0.20	mg/L	1	05/20/2011 17:40
Pentachlorophenol	Α	ND	0.0052	1.0	mg/L	1	05/20/2011 17:46
Pyridine	А	ND	0.013	0.20	mg/L	1	05/20/2011 17:40
Total Cresol	М	ND	0.0056	0.20	mg/L	1	05/20/2011 17:40
Surr: 2,4,6-Tribromophenol	S	97.90		47.8-138	%REC	1	05/20/2011 17:46
Surr: 2-Fluorobiphenyl	S	55.40		10-110	%REC	1	05/20/2011 17:46
Surr: 2-Fluorophenol	S	74.70		10-110	%REC	1	05/20/2011 17:40
Surr: Nitrobenzene-d5	S	56.60		10-110	%REC	1	05/20/2011 17:46
Surr: Phenol-d5	S	102.00		10-60.8	S %REC	1	05/20/2011 17:40
Surr: Terphenyl-d14	S	69.20		16.8-110	%REC	1	05/20/2011 17:46

### Method: 1311/8260B

### Analyst:jln

TCLP VOA Zero Head Extraction						Prep Date/	Time: 05/19/2011 08:38
1,1-Dichloroethene	Α	ND	0.085	0.25	mg/L	50	05/19/2011 15:16
1,2-Dichloroethane	Α	ND	0.060	0.25	mg/L	50	05/19/2011 15:16
2-Butanone	Α	ND	0.18	0.50	mg/L	50	05/19/2011 15:16
Benzene	Α	ND	0.040	0.25	mg/L	50	05/19/2011 15:16
Carbon tetrachloride	Α	ND	0.085	0.25	mg/L	50	05/19/2011 15:16
Chlorobenzene	Α	ND	0.040	0.25	mg/L	50	05/19/2011 15:16



**Environmental Restoration** Client:

**Client Project:** Markham Dump

Client Sample ID: MD-INK-5 Work Order/ID: 11E0515-05

**Sample Description:** 

Sampled: 05/06/2011 10:00 Matrix: Solid Received: 05/13/2011 10:15

Analyses	AT	Result	MDL	RL	Qual Units	DF	Analyzed
		Method: 13	11/8260B			An	alyst: <b>jln</b>
CLP VOA Zero Head Extraction						Prep Date/	Time: 05/19/2011 08:38
Chloroform	Α	ND	0.045	0.25	mg/L	50	05/19/2011 15:16
Tetrachloroethene	А	ND	0.065	0.25	mg/L	50	05/19/2011 15:16
Trichloroethene	A	ND	0.045	0.25	mg/L	50	05/19/2011 15:16
Vinyl chloride	А	ND	0.045	0.10	mg/L	50	05/19/2011 15:16
1,4-Dichlorobenzene	В	ND	0.035	0.50	mg/L	50	05/19/2011 15:16
Surr: 1,2-Dichloroethane-d4	S	131.00		74.5-132	%REC	50	05/19/2011 15:16
Surr: 4-Bromofluorobenzene	S	103.00		80-120	%REC	50	05/19/2011 15:16
Surr: Dibromofluoromethane	S	106.00		80-120	%REC	50	05/19/2011 15:16
Surr: Toluene-d8	S	100.00		80-120	%REC	50	05/19/2011 15:16
		Method: 13	11/7470A			An	alyst: <b>RPL</b>
CLP Mercury by CVAA						Prep Date/	Time: 05/18/2011 10:36
Mercury	А	ND		0.00100	mg/L	1	05/18/2011 14:12
		Method: 13	11/6010B			An	alyst: <b>SA</b>
CLP Metals by ICP						Prep Date/	Time: <b>05/18/2011 09:55</b>
Arsenic	А	ND		0.0100	mg/L	1	05/18/2011 16:55
Barium	А	ND		0.500	mg/L	1	05/18/2011 16:55
Cadmium	А	ND		0.00200	mg/L	1	05/18/2011 16:55
Chromium	Α	0 0474		0.00300	ma/l	1	05/18/2011 16:55

Arsenic	Α	ND	0.0100	mg/L	1	05/18/2011 16:55
Barium	Α	ND	0.500	mg/L	1	05/18/2011 16:55
Cadmium	Α	ND	0.00200	mg/L	1	05/18/2011 16:55
Chromium	Α	0.0474	0.00300	mg/L	1	05/18/2011 16:55
Lead	Α	0.0436	0.00750	mg/L	1	05/18/2011 16:55
Selenium	Α	ND	0.0300	mg/L	1	05/18/2011 16:55
Silver	Α	ND	0.0100	mg/L	1	05/18/2011 16:55

	Method: SW-846 10	Method: SW-846 1010				
Ignitability (Closed Cup)				Prep Date/	Time: 05/20/2011 16:41	
Ignitability	A > 170	30	°F	1	05/20/2011 16:41	

	Method: SW-846 9099	Method: SW-846 9095B					
Paint Filter			Р	rep Date/	Time: 05/20/2011 14:15		
Paint Filter	A Fail	0.0	Pass/Fail	1	05/20/2011 15:14		
	Method: 014 046 004			۸۰۰	alvet ADO		

	Wethou. <b>344-046</b>	90456		Ai	ialyst. ADG
pH			Р	rep Date/	Time: 05/20/2011 14:15
рН	A 9.90	2.00	pH Units	1	05/20/2011 15:11

	Method: SW-846 9066				Analyst: <b>EINIK</b>			
Total Phenolics					Prep Date/	Time: 05/17/2011 11:30		
Phenolics, Total Recoverable	A 1.4		0.48	mg/Kg	1	05/18/2011 13:37		

			Method: Chapter 7/90		Analyst: GOEHL			
R	eactive Cyanide				F	rep Date/	Time: 05/20/2011 09:15	
	Reactive Cyanide	Α	ND	9.9	mg/Kg	1	05/20/2011 14:35	

Method: Chapter 7/9034

Analyst: ABG Prep Date/Time: 05/20/2011 09:15

**Reactive Sulfide** 



Client: Environmental Restoration

Client Project: Markham Dump

 Client Sample ID:
 MD-INK-5
 Work Order/ID:
 11E0515-05

Sample Description: Sampled: 05/06/2011 10:00

Matrix: Solid Received: 05/13/2011 10:15

ΑT Result MDL RL Qual Units DF **Analyses** Analyzed Method: Chapter 7/9034 Analyst: ABG Prep Date/Time: 05/20/2011 09:15 **Reactive Sulfide** Reactive Sulfide Α ND 9.9 Н mg/Kg 05/20/2011 15:37



Client: **Environmental Restoration** 

**Client Project:** Markham Dump

Client Sample ID: MD-OIL-6 Work Order/ID: 11E0515-06

Date:

**Sample Description:** 

Sampled: 05/06/2011 10:00 Solid 05/13/2011 10:15 Matrix: Received:

Analyses	AT	Result	MDL R	RL	Qual	Units	DF	Analyzed	
		Method: S\	W-846 8082				Analyst: cir		
Polychlorinated Biphenyls							Prep Date/1	ime:05/19/2011 10:12	
Aroclor 1016	А	ND		990		μg/Kg	1	05/19/2011 21:38	
Aroclor 1221	А	ND		990		μg/Kg	1	05/19/2011 21:38	
Aroclor 1232	А	ND		990		μg/Kg	1	05/19/2011 21:38	
Aroclor 1242	A	ND		990		μg/Kg	1	05/19/2011 21:38	
Aroclor 1248	А	ND		990		μg/Kg	1	05/19/2011 21:38	
Aroclor 1254	A	ND		990		μg/Kg	1	05/19/2011 21:38	
Aroclor 1260	А	10000		990		μg/Kg	1	05/19/2011 21:38	
Aroclor 1262	А	ND		990		μg/Kg	1	05/19/2011 21:38	
Aroclor 1268	А	ND		990		μg/Kg	1	05/19/2011 21:38	
Total PCB's	A	10000		990		μg/Kg	1	05/19/2011 21:38	
Surr: Decachlorobiphenyl	S	75.00	52.6	6-143		%REC	1	05/19/2011 21:38	
Surr: Tetrachloro-m-xylene	S	85.00	51.3	3-135		%REC	1	05/19/2011 21:38	

### Method: 1311/8270C

### Analyst: BR

Thursday, May 26, 2011

CLP Semivolatile Organic Compounds						P	rep Date/1	Fime: <b>05/19/2011 09:06</b>
1,4-Dichlorobenzene	Α	ND	0.018	1.0		mg/L	20	05/20/2011 14:48
2,4,5-Trichlorophenol	Α	ND	0.030	1.0		mg/L	20	05/20/2011 14:48
2,4,6-Trichlorophenol	Α	ND	0.018	1.0		mg/L	20	05/20/2011 14:48
2,4-Dinitrotoluene	Α	ND	0.016	1.0		mg/L	20	05/20/2011 14:48
2-Methylphenol	Α	0.13	0.014	1.0	J	mg/L	20	05/20/2011 14:48
3/4-Methylphenol	Α	0.081	0.016	1.0	J	mg/L	20	05/20/2011 14:48
Hexachlorobenzene	Α	ND	0.018	1.0		mg/L	20	05/20/2011 14:48
Hexachlorobutadiene	Α	ND	0.018	1.0		mg/L	20	05/20/2011 14:48
Hexachloroethane	Α	ND	0.018	1.0		mg/L	20	05/20/2011 14:48
Nitrobenzene	Α	ND	0.020	1.0		mg/L	20	05/20/2011 14:48
Pentachlorophenol	Α	ND	0.026	5.0		mg/L	20	05/20/2011 14:48
Pyridine	Α	ND	0.066	1.0		mg/L	20	05/20/2011 14:48
Total Cresol	М	0.21	0.028	1.0	J	mg/L	20	05/20/2011 14:48
Surr: 2,4,6-Tribromophenol	S	3.71		47.8-138	DS	%REC	20	05/20/2011 14:48
Surr: 2-Fluorobiphenyl	S	3.29		10-110	DS	%REC	20	05/20/2011 14:48
Surr: 2-Fluorophenol	S	3.45		10-110	DS	%REC	20	05/20/2011 14:48
Surr: Nitrobenzene-d5	S	2.81		10-110	DS	%REC	20	05/20/2011 14:48
Surr: Phenol-d5	S	3.53		10-60.8	DS	%REC	20	05/20/2011 14:48
Surr: Terphenyl-d14	S	3.44		16.8-110	DS	%REC	20	05/20/2011 14:48

### Method: 1311/8260B

### Analyst:jln

TCLP VOA Zero Head Extraction						Prep Date/	Time: 05/19/2011 08:38
1,1-Dichloroethene	Α	ND	0.017	0.050	mg/L	10	05/19/2011 13:51
1,2-Dichloroethane	Α	ND	0.012	0.050	mg/L	10	05/19/2011 13:51
2-Butanone	Α	ND	0.036	0.10	mg/L	10	05/19/2011 13:51
Benzene	Α	0.011	0.0080	0.050	J mg/L	10	05/19/2011 13:51
Carbon tetrachloride	Α	ND	0.017	0.050	mg/L	10	05/19/2011 13:51
Chlorobenzene	Α	ND	0.0080	0.050	mg/L	10	05/19/2011 13:51



**Analytical Results** Date:

Client: **Environmental Restoration** 

**Client Project:** Markham Dump

MD-OIL-6 11E0515-06 **Client Sample ID:** Work Order/ID:

Sample Description:

Sampled: 05/06/2011 10:00 Matrix: Solid Received: 05/13/2011 10:15

Analyses	AT	Result	MDL	RL	Qual	Units	DF	Analyzed	
		Method: 13	311/8260B				Analyst: <b>jIn</b>		
TCLP VOA Zero Head Extraction							Prep Date/	Time: 05/19/2011 08:38	
Chloroform	Α	ND	0.0090	0.050		mg/L	10	05/19/2011 13:51	
Tetrachloroethene	Α	ND	0.013	0.050		mg/L	10	05/19/2011 13:51	
Trichloroethene	А	ND	0.0090	0.050		mg/L	10	05/19/2011 13:51	
Vinyl chloride	А	ND	0.0090	0.020		mg/L	10	05/19/2011 13:51	
1,4-Dichlorobenzene	В	ND	0.0070	0.10		mg/L	10	05/19/2011 13:51	
Surr: 1,2-Dichloroethane-d4	S	121.00		74.5-132		%REC	10	05/19/2011 13:51	
Surr: 4-Bromofluorobenzene	S	101.00		80-120		%REC	10	05/19/2011 13:51	
Surr: Dibromofluoromethane	S	103.00		80-120		%REC	10	05/19/2011 13:51	
Surr: Toluene-d8	S	102.00		80-120		%REC	10	05/19/2011 13:51	

Method: 1311/7470A Analyst: SA **TCLP Mercury by CVAA** Prep Date/Time: 05/19/2011 09:10 ND 0.00100 mg/L 05/20/2011 12:15 Mercury

			Method: 13	311/6010B		Ar	nalyst: <b>SA</b>
TCLP Me	etals by ICP					Prep Date/	Time: 05/19/2011 08:45
Arseni	С	Α	0.0432	0.0100	mg/L	1	05/19/2011 16:16
Barium	1	Α	4.63	0.500	mg/L	1	05/19/2011 16:16
Cadmi	um	Α	0.107	0.00200	mg/L	1	05/19/2011 16:16
Chrom	ium	Α	ND	0.00300	mg/L	1	05/19/2011 16:16
Lead		Α	16.6	0.00750	mg/L	1	05/19/2011 16:16
Seleni	um	Α	ND	0.0300	mg/L	1	05/19/2011 16:16
Silver		Α	ND	0.0100	mg/L	1	05/19/2011 16:16

Method: SW-846 1010 Analyst: TMG Ignitability (Closed Cup) Prep Date/Time: 05/20/2011 15:35 A > 170 30 °F 05/20/2011 15:35 Ignitability

Method: SW-846 9095B Analyst: ABG **Paint Filter** Prep Date/Time: 05/20/2011 14:15 Pass/Fail 05/20/2011 15:14 A Fail 0.0 Paint Filter

Method: SW-846 9045C Analyst: ABG рΗ Prep Date/Time: 05/20/2011 14:15 A 4.35 2.00 pH Units 05/20/2011 15:11 pН

Method: SW-846 9066 Analyst: EINIK **Total Phenolics** Prep Date/Time: 05/17/2011 11:30 A 7.6 0.49 05/18/2011 13:38 Phenolics, Total Recoverable mg/Kg

Analyst: GOEHL Method: Chapter 7/9014 Prep Date/Time: 05/20/2011 09:15 **Reactive Cyanide** Α ND 9.9 mg/L 05/20/2011 14:36 Reactive Cyanide

Method: Chapter 7/9034

Analyst: ABG Prep Date/Time: 05/20/2011 09:15

Thursday, May 26, 2011

Reactive Sulfide



Client: Environmental Restoration

Client Project: Markham Dump

 Client Sample ID:
 MD-OIL-6
 Work Order/ID:
 11E0515-06

Sample Description: Sampled: 05/06/2011 10:00

 Matrix:
 Solid
 Received:
 05/13/2011
 10:15

ΑT Result MDL RL Qual Units DF **Analyses** Analyzed Method: Chapter 7/9034 Analyst: ABG Prep Date/Time: 05/20/2011 09:15 **Reactive Sulfide** Reactive Sulfide Α ND 9.9 Н mg/L 05/20/2011 15:37



**Environmental Restoration** Client:

Markham Dump **Client Project:** 

MD-BS-7 Work Order/ID: 11E0515-07 **Client Sample ID:** 

Date:

Thursday, May 26, 2011

**Sample Description:** 

05/06/2011 10:00 Sampled: Solid 05/13/2011 10:15 Matrix: Received:

Analyses	AT	Result	MDL	RL	Qual	Units	DF	Analyzed
		Method: 13	11/8270C			Analyst: <b>BR</b>		
CLP Semivolatile Organic Compounds						Prep Date/Time: 05/18/2011 09:19		
1,4-Dichlorobenzene	Α	ND	0.00090	0.050		mg/L	1	05/20/2011 16:05
2,4,5-Trichlorophenol	Α	ND	0.0015	0.050		mg/L	1	05/20/2011 16:05
2,4,6-Trichlorophenol	Α	ND	0.00090	0.050		mg/L	1	05/20/2011 16:05
2,4-Dinitrotoluene	А	ND	0.00080	0.050		mg/L	1	05/20/2011 16:05
2-Methylphenol	А	0.0067	0.00070	0.050	J	mg/L	1	05/20/2011 16:05
3/4-Methylphenol	А	ND	0.00080	0.050		mg/L	1	05/20/2011 16:05
Hexachlorobenzene	Α	ND	0.00090	0.050		mg/L	1	05/20/2011 16:05
Hexachlorobutadiene	А	ND	0.00090	0.050		mg/L	1	05/20/2011 16:05
Hexachloroethane	А	ND	0.00090	0.050		mg/L	1	05/20/2011 16:05
Nitrobenzene	А	ND	0.0010	0.050		mg/L	1	05/20/2011 16:05
Pentachlorophenol	Α	ND	0.0013	0.25		mg/L	1	05/20/2011 16:05
Pyridine	Α	ND	0.0033	0.050		mg/L	1	05/20/2011 16:05
Total Cresol	М	0.0067	0.0014	0.050	J	mg/L	1	05/20/2011 16:05
Surr: 2,4,6-Tribromophenol	S	93.00		47.8-138		%REC	1	05/20/2011 16:05
Surr: 2-Fluorobiphenyl	S	66.90		10-110		%REC	1	05/20/2011 16:05
Surr: 2-Fluorophenol	S	96.90		10-110		%REC	1	05/20/2011 16:05
Surr: Nitrobenzene-d5	S	60.00		10-110		%REC	1	05/20/2011 16:05
Surr: Phenol-d5	S	130.00		10-60.8	S	%REC	1	05/20/2011 16:05
Surr: Terphenyl-d14	S	71.70		16.8-110		%REC	1	05/20/2011 16:05

#### Method: 1311/8260B Analyst:jln Prep Date/Time: 05/18/2011 08:00 **TCLP VOA Zero Head Extraction** 0.017 0.050 05/19/2011 14:51 1 1 Diablaraathana

A	ND	0.017	0.050	mg/L	10	05/18/2011 14:51
Α	ND	0.012	0.050	mg/L	10	05/18/2011 14:51
Α	ND	0.036	0.10	mg/L	10	05/18/2011 14:51
Α	ND	0.0080	0.050	mg/L	10	05/18/2011 14:51
Α	ND	0.017	0.050	mg/L	10	05/18/2011 14:51
Α	ND	0.0080	0.050	mg/L	10	05/18/2011 14:51
Α	ND	0.0090	0.050	mg/L	10	05/18/2011 14:51
Α	ND	0.013	0.050	mg/L	10	05/18/2011 14:51
Α	ND	0.0090	0.050	mg/L	10	05/18/2011 14:51
Α	ND	0.0090	0.020	mg/L	10	05/18/2011 14:51
В	ND	0.0070	0.10	mg/L	10	05/18/2011 14:51
S	96.70		74.5-132	%REC	10	05/18/2011 14:51
S	105.00		80-120	%REC	10	05/18/2011 14:51
S	95.40		80-120	%REC	10	05/18/2011 14:51
S	103.00		80-120	%REC	10	05/18/2011 14:51
	A A A A A A B S S S	A ND	A ND 0.012 A ND 0.036 A ND 0.0080 A ND 0.0080 A ND 0.0080 A ND 0.0090 A ND 0.0090 A ND 0.0090 B ND 0.0070 S 96.70 S 105.00 S 95.40	A ND 0.012 0.050 A ND 0.036 0.10 A ND 0.0080 0.050 A ND 0.0080 0.050 A ND 0.0080 0.050 A ND 0.0080 0.050 A ND 0.0090 0.050 A ND 0.0090 0.050 A ND 0.0090 0.050 A ND 0.0090 0.050 B ND 0.0090 0.020 B ND 0.0070 0.10 S 96.70 74.5-132 S 105.00 80-120	A         ND         0.012         0.050         mg/L           A         ND         0.036         0.10         mg/L           A         ND         0.0080         0.050         mg/L           A         ND         0.017         0.050         mg/L           A         ND         0.0080         0.050         mg/L           A         ND         0.0090         0.020         mg/L           B         ND         0.0070         0.10         mg/L           S         96.70         74.5-132         %REC           S         95.40         80-120         %REC	A         ND         0.012         0.050         mg/L         10           A         ND         0.036         0.10         mg/L         10           A         ND         0.0080         0.050         mg/L         10           A         ND         0.017         0.050         mg/L         10           A         ND         0.0080         0.050         mg/L         10           A         ND         0.0090         0.050         mg/L         10           A         ND         0.0090         0.050         mg/L         10           A         ND         0.0090         0.050         mg/L         10           B         ND         0.0070         0.10         mg/L         10           S         96.70         74.5-132         %REC         10           S         95.40         80-120         %REC         10

Method: 1311/7470A Analyst: SA Prep Date/Time: 05/19/2011 09:10 **TCLP Mercury by CVAA** Α ND 0.00100 05/20/2011 12:43 Mercury mg/L



Client: **Environmental Restoration** 

Markham Dump **Client Project:** 

MD-BS-7 Work Order/ID: 11E0515-07 **Client Sample ID:** 

Chent Sample iD. MD-DO-7						ANOLK	Oluei/ID.	1120	313-0
Sample Description:						Sampl	led:	05/06/2011	10:0
Matrix: Solid						Receiv	/ed:	05/13/2011	10:1
Analyses	AT	Result	MDL	RL	Qual	Units	DF	Analyze	d
		Method: 13	11/6010B				Ana	lyst: <b>SA</b>	
TCLP Metals by ICP							Prep Date/T	ime: <b>05/18/2011</b> (	09:55
Arsenic	А	0.0122	(	0.0100	ı	mg/L	1	05/18/2011 1	8:45
Barium	А	ND		0.500	ı	mg/L	1	05/18/2011 1	8:45
Cadmium	А	ND	0.	.00200	ı	mg/L	1	05/18/2011 1	8:45
Chromium	А	ND	0.	.00300	1	mg/L	1	05/18/2011 1	8:45
Lead	А	ND	0.	.00750	В	mg/L	1	05/18/2011 1	8:45
Selenium	А	ND	(	0.0300	ı	mg/L	1	05/18/2011 1	8:45
Silver	А	ND	(	0.0100	1	mg/L	1	05/18/2011 1	8:45
Paint Filter	A	Pass Method: SV	N-846 9045C	0.0	I	Pass/Fail		05/20/2011 1 lyst: <b>ABG</b> ime: <b>05/20/2011</b>	
pH pH	A	10.6		2.00		pH Units	1	05/20/2011 1	
Total Phenolics			V-846 9066	2.00	, r	, , , , , , , , , , , , , , , , , , ,		lyst: <b>EINIK</b> ime: <b>05/17/2011</b>	
Phenolics, Total Recoverable	А	ND		0.49	1	mg/Kg	1	05/18/2011 1	3:39
Reactive Cyanide		Method: Ch	napter 7/9014					lyst: <b>GOEHL</b> ime: <b>05/20/2011</b> (	09:15
Reactive Cyanide	A	ND		9.9	ı	mg/Kg	1	05/20/2011 1	4:37
Reactive Sulfide		Method: Cr	napter 7/9034					lyst: <b>ABG</b> ime: <b>05/20/2011 (</b>	19:15
Reactive Suffide	Α	ND		9.9	Н	mg/Kg	1	05/20/2011 1	
Reactive Sullide	A	ND		9.9		ilig/Ng	1	03/20/2011 1	5.51



**Environmental Restoration** Client:

Markham Dump **Client Project:** 

MD-OXS-8 Work Order/ID: 11E0515-08 **Client Sample ID:** 

Date:

%REC

80-120

Thursday, May 26, 2011

**Sample Description:** 

Surr: Toluene-d8

05/06/2011 10:00 Sampled: Solid Received: Matrix: 05/13/2011 10:15

Analyses	AT	Result	MDL	RL	Qual	Units	DF	Analyzed	
		Method: 13	11/8270C			Analyst: <b>BR</b>			
CLP Semivolatile Organic Compounds							Prep Date/1	Time: <b>05/18/2011 09:19</b>	
1,4-Dichlorobenzene	Α	ND	0.00090	0.050	1	mg/L	1	05/20/2011 18:06	
2,4,5-Trichlorophenol	Α	ND	0.0015	0.050	1	mg/L	1	05/20/2011 18:06	
2,4,6-Trichlorophenol	Α	ND	0.00090	0.050	1	mg/L	1	05/20/2011 18:06	
2,4-Dinitrotoluene	А	ND	0.00080	0.050	1	mg/L	1	05/20/2011 18:06	
2-Methylphenol	А	ND	0.00070	0.050	1	mg/L	1	05/20/2011 18:06	
3/4-Methylphenol	А	ND	0.00080	0.050	1	mg/L	1	05/20/2011 18:06	
Hexachlorobenzene	А	ND	0.00090	0.050	1	mg/L	1	05/20/2011 18:06	
Hexachlorobutadiene	А	ND	0.00090	0.050	ı	mg/L	1	05/20/2011 18:06	
Hexachloroethane	А	ND	0.00090	0.050	1	mg/L	1	05/20/2011 18:06	
Nitrobenzene	Α	ND	0.0010	0.050	1	mg/L	1	05/20/2011 18:06	
Pentachlorophenol	Α	ND	0.0013	0.25	1	mg/L	1	05/20/2011 18:06	
Pyridine	Α	ND	0.0033	0.050	1	mg/L	1	05/20/2011 18:06	
Total Cresol	М	ND	0.0014	0.050	1	mg/L	1	05/20/2011 18:06	
Surr: 2,4,6-Tribromophenol	S	85.00		47.8-138	C	%REC	1	05/20/2011 18:06	
Surr: 2-Fluorobiphenyl	S	41.80		10-110	C	%REC	1	05/20/2011 18:06	
Surr: 2-Fluorophenol	S	52.50		10-110	C	%REC	1	05/20/2011 18:06	
Surr: Nitrobenzene-d5	S	40.00		10-110	C	%REC	1	05/20/2011 18:06	
Surr: Phenol-d5	S	82.80		10-60.8	S	%REC	1	05/20/2011 18:06	
Surr: Terphenyl-d14	S	60.80		16.8-110	(	%REC	1	05/20/2011 18:06	

			Method: 13	11/8260B			Ar	nalyst: <b>jin</b>
T	CLP VOA Zero Head Extraction						Prep Date/	Time:05/18/2011 08:00
	1,1-Dichloroethene	Α	ND	0.017	0.050	mg/L	10	05/18/2011 15:19
	1,2-Dichloroethane	А	ND	0.012	0.050	mg/L	10	05/18/2011 15:19
	2-Butanone	Α	ND	0.036	0.10	mg/L	10	05/18/2011 15:19
	Benzene	А	ND	0.0080	0.050	mg/L	10	05/18/2011 15:19
	Carbon tetrachloride	А	ND	0.017	0.050	mg/L	10	05/18/2011 15:19
	Chlorobenzene	А	ND	0.0080	0.050	mg/L	10	05/18/2011 15:19

Carbon tetrachionde	٠,	ND	0.017	0.000	mg/L	.0	00/10/2011 10:10
Chlorobenzene	Α	ND	0.0080	0.050	mg/L	10	05/18/2011 15:19
Chloroform	Α	ND	0.0090	0.050	mg/L	10	05/18/2011 15:19
Tetrachloroethene	Α	ND	0.013	0.050	mg/L	10	05/18/2011 15:19
Trichloroethene	Α	ND	0.0090	0.050	mg/L	10	05/18/2011 15:19
Vinyl chloride	Α	ND	0.0090	0.020	mg/L	10	05/18/2011 15:19
1,4-Dichlorobenzene	В	ND	0.0070	0.10	mg/L	10	05/18/2011 15:19
Surr: 1,2-Dichloroethane-d4	S	95.50		74.5-132	%REC	10	05/18/2011 15:19
Surr: 4-Bromofluorobenzene	S	108.00		80-120	%REC	10	05/18/2011 15:19
Surr: Dibromofluoromethane	S	94.20		80-120	%REC	10	05/18/2011 15:19

Method: 1311/7470A Analyst: SA Prep Date/Time: 05/19/2011 09:10 **TCLP Mercury by CVAA** Α ND 0.00500 05/20/2011 12:45 Mercury mg/L

S 100.00

05/18/2011 15:19



Client: **Environmental Restoration** 

**Client Project:** Markham Dump

Client Sample ID: MD-OXS-8 Work Order/ID: 11E0515-08

**Sample Description:** 

Reactive Sulfide

Sampled: 05/06/2011 10:00 Solid 05/13/2011 10:15 Matrix: Received:

Analyses	AT	Result	MDL	RL	Qual	Units	DF	Analyzed
		Method: 13	311/6010B				Ana	alyst: <b>SA</b>
TCLP Metals by ICP							Prep Date/1	Time: 05/18/2011 09:5
Arsenic	A	0.0998		0.0100		mg/L	1	05/18/2011 18:50
Barium	A	ND		0.500		mg/L	1	05/18/2011 18:50
Cadmium	Α	ND		0.00200		mg/L	1	05/18/2011 18:50
Chromium	Α	ND		0.00500		mg/L	1	05/18/2011 18:50
Lead	А	ND		0.0100	В	mg/L	1	05/18/2011 18:50
Selenium	Α	ND		0.0300		mg/L	1	05/18/2011 18:50
Silver	Α	ND		0.0100		mg/L	1	05/18/2011 18:50
		Method: AS	STM D92-90	Modified			Ana	alyst: <b>TMG</b>
Ignitability (Open Cup)								
Ignitability	А	> 170		30		°F	1	05/20/2011 11:46
		Made a de ON	N 040 000ED				A	-lt-ADO
Paint Filter		ivietnod: SV	N-846 9095B	•				alyst: <b>ABG</b> Fime: <b>05/20/2011 14:1</b> :
	Δ.	Fail		0.0		Pass/Fail	1	
Paint Filter	Α	raii		0.0		Pass/Fall	1	05/20/2011 15:14
		Method: SV	N-846 9045C	;			Ana	alyst: <b>ABG</b>
pH							Prep Date/1	Time: 05/20/2011 14:1
рН	Α	9.95		2.00		pH Units	1	05/20/2011 15:11
		Method: SV	N-846 9066				Ana	alyst: <b>EINIK</b>
Total Phenolics								rime: <b>05/17/2011 11:3</b>
Phenolics, Total Recoverable	А	ND		0.48		mg/Kg	1	05/18/2011 13:40
	-	Method: Ch	napter 7/9014	4			Δn	alyst:GOEHL
Reactive Cyanide		Wethou. Of	iaptei 7/301-	•				Time: 05/20/2011 09:1
Reactive Cyanide	Α	ND		9.9		mg/Kg	1	05/20/2011 14:39
,		Motho di Ci	t 7/000				Δ	alvet: ADO
Departure Culfide		ivietnod: Ch	napter 7/9034	4				alyst: <b>ABG</b> Fime: <b>05/20/2011 09:1</b> :
Reactive Sulfide							riep Date/	iiiie.05/20/2011 09:1

ND

9.9

mg/Kg

Α

05/20/2011 15:37



**Environmental Restoration** Client:

Markham Dump **Client Project:** 

MD-BAG-9 Work Order/ID: 11E0515-09 **Client Sample ID:** 

Date:

Thursday, May 26, 2011

**Sample Description:** 

05/06/2011 10:00 Sampled: Solid Received: 05/13/2011 10:15 Matrix:

Analyses	AT	Result	MDL	RL	Qual	Units	DF	Analyzed	
		Method: 13	11/8270C			Analyst: <b>BR</b>			
TCLP Semivolatile Organic Compounds							Prep Date/1	ime:05/18/2011 09:19	
1,4-Dichlorobenzene	Α	ND	0.00090	0.050		mg/L	1	05/20/2011 18:26	
2,4,5-Trichlorophenol	Α	ND	0.0015	0.050		mg/L	1	05/20/2011 18:26	
2,4,6-Trichlorophenol	Α	ND	0.00090	0.050		mg/L	1	05/20/2011 18:26	
2,4-Dinitrotoluene	А	ND	0.00080	0.050		mg/L	1	05/20/2011 18:26	
2-Methylphenol	Α	ND	0.00070	0.050		mg/L	1	05/20/2011 18:26	
3/4-Methylphenol	А	ND	0.00080	0.050		mg/L	1	05/20/2011 18:26	
Hexachlorobenzene	А	ND	0.00090	0.050		mg/L	1	05/20/2011 18:26	
Hexachlorobutadiene	А	ND	0.00090	0.050		mg/L	1	05/20/2011 18:26	
Hexachloroethane	А	ND	0.00090	0.050		mg/L	1	05/20/2011 18:26	
Nitrobenzene	Α	ND	0.0010	0.050		mg/L	1	05/20/2011 18:26	
Pentachlorophenol	А	ND	0.0013	0.25		mg/L	1	05/20/2011 18:26	
Pyridine	Α	ND	0.0033	0.050		mg/L	1	05/20/2011 18:26	
Total Cresol	М	ND	0.0014	0.050		mg/L	1	05/20/2011 18:26	
Surr: 2,4,6-Tribromophenol	S	97.10		47.8-138		%REC	1	05/20/2011 18:26	
Surr: 2-Fluorobiphenyl	S	56.40		10-110		%REC	1	05/20/2011 18:26	
Surr: 2-Fluorophenol	S	87.30		10-110		%REC	1	05/20/2011 18:26	
Surr: Nitrobenzene-d5	S	60.60		10-110		%REC	1	05/20/2011 18:26	
Surr: Phenol-d5	S	134.00		10-60.8	S	%REC	1	05/20/2011 18:26	
Surr: Terphenyl-d14	S	73.20		16.8-110		%REC	1	05/20/2011 18:26	

		Method: 1311/		Analyst: <b>jin</b>			
TCLP VOA Zero Head Extraction						Prep Date/	Time: 05/18/2011 08:00
1,1-Dichloroethene	Α	ND	0.017	0.050	mg/L	10	05/18/2011 15:48

A	ND	0.017	0.050	mg/L	10	05/18/2011 15:48
Α	ND	0.012	0.050	mg/L	10	05/18/2011 15:48
Α	ND	0.036	0.10	mg/L	10	05/18/2011 15:48
Α	ND	0.0080	0.050	mg/L	10	05/18/2011 15:48
Α	ND	0.017	0.050	mg/L	10	05/18/2011 15:48
Α	ND	0.0080	0.050	mg/L	10	05/18/2011 15:48
Α	ND	0.0090	0.050	mg/L	10	05/18/2011 15:48
Α	ND	0.013	0.050	mg/L	10	05/18/2011 15:48
Α	ND	0.0090	0.050	mg/L	10	05/18/2011 15:48
Α	ND	0.0090	0.020	mg/L	10	05/18/2011 15:48
В	ND	0.0070	0.10	mg/L	10	05/18/2011 15:48
S	96.60		74.5-132	%REC	10	05/18/2011 15:48
S	108.00		80-120	%REC	10	05/18/2011 15:48
S	99.50		80-120	%REC	10	05/18/2011 15:48
S	104.00		80-120	%REC	10	05/18/2011 15:48
	A A A A A B S S S S	A ND	A ND 0.012 A ND 0.036 A ND 0.080 A ND 0.0080 A ND 0.0080 A ND 0.0090 A ND 0.0090 A ND 0.0090 B ND 0.0070 S 96.60 S 108.00 S 99.50	A       ND       0.012       0.050         A       ND       0.036       0.10         A       ND       0.0080       0.050         A       ND       0.017       0.050         A       ND       0.0080       0.050         A       ND       0.0090       0.050         A       ND       0.0090       0.050         A       ND       0.0090       0.050         A       ND       0.0090       0.020         B       ND       0.0070       0.10         S       96.60       74.5-132         S       108.00       80-120         S       99.50       80-120	A         ND         0.012         0.050         mg/L           A         ND         0.036         0.10         mg/L           A         ND         0.0080         0.050         mg/L           A         ND         0.017         0.050         mg/L           A         ND         0.0080         0.050         mg/L           A         ND         0.0090         0.050         mg/L           A         ND         0.013         0.050         mg/L           A         ND         0.0090         0.050         mg/L           A         ND         0.0090         0.020         mg/L           B         ND         0.0070         0.10         mg/L           S         96.60         74.5-132         %REC           S         108.00         80-120         %REC	A         ND         0.012         0.050         mg/L         10           A         ND         0.036         0.10         mg/L         10           A         ND         0.0080         0.050         mg/L         10           A         ND         0.017         0.050         mg/L         10           A         ND         0.0080         0.050         mg/L         10           A         ND         0.0090         0.050         mg/L         10           A         ND         0.0090         0.050         mg/L         10           A         ND         0.0090         0.050         mg/L         10           B         ND         0.0070         0.10         mg/L         10           S         96.60         74.5-132         %REC         10           S         99.50         80-120         %REC         10

Method: 1311/7470A Analyst: RPL Prep Date/Time: 05/18/2011 10:36 **TCLP Mercury by CVAA** Α ND 0.00100 05/18/2011 14:13 Mercury mg/L



Client: **Environmental Restoration** 

**Client Project:** Markham Dump

MD-BAG-9 Work Order/ID: 11E0515-09 **Client Sample ID:** 

**Sample Description:** 

Sampled: 05/06/2011 10:00 Matrix: Solid Received: 05/13/2011 10:15

Matrix: Solid						Receiv	ed:	05/13/2011 10:15
Analyses	AT	Result	MDL	RL	Qual	Units	DF	Analyzed
		Method: 13	311/6010B				An	alyst: <b>SA</b>
TCLP Metals by ICP							Prep Date/	Time: 05/18/2011 09:55
Arsenic	A	ND		0.0100		mg/L	1	05/18/2011 17:01
Barium	A	ND		0.500		mg/L	1	05/18/2011 17:01
Cadmium	Α	ND		0.00200		mg/L	1	05/18/2011 17:01
Chromium	A	ND		0.00300		mg/L	1	05/18/2011 17:01
Lead	Α	ND		0.00750		mg/L	1	05/18/2011 17:01
Selenium	A	ND		0.0300		mg/L	1	05/18/2011 17:01
Silver	Α	ND		0.0100		mg/L	1	05/18/2011 17:01
Ignitability (Open Cup)		Method: AS	STM D92-90 I	Modified				alyst: <b>TMG</b> Fime: <b>05/20/2011 15:35</b>
Ignitability	Α	> 170		30		°F	1	05/20/2011 15:35
		Method: SV	N-846 9095B				An	alyst: <b>ABG</b>
Paint Filter		Wictiod. Ci	11-040 3030D					Fime: 05/20/2011 14:15
Paint Filter	A	Pass		0.0		Pass/Fail	1	05/20/2011 15:14
		Method: S\	N-846 9045C				An	alyst: ABG
pH								Time: 05/20/2011 14:15
pH	Α	9.84		2.00		pH Units	1	05/20/2011 15:11
		Method: SI	N-846 9066				An	alyst: <b>EINIK</b>
Total Phenolics								Time: 05/17/2011 11:30
Phenolics, Total Recoverable	Α	ND		0.50		mg/Kg	1	05/18/2011 13:40
		Method: C	hapter 7/9014	1			An	alyst: <b>GOEHL</b>
Reactive Cyanide		Wictiriou. O	napter 77501-	•				Fime: 05/20/2011 09:15
Reactive Cyanide	Α	ND		10		mg/Kg	1	05/20/2011 14:40
		Method: CI	hapter 7/9034	1			An	alyst: <b>ABG</b>
Reactive Sulfide			aptor 77000-	•				Fime: 05/20/2011 09:15
Reactive Sulfide	Α	ND		10	Н	mg/Kg	1	05/20/2011 15:37



Client: Environmental Restoration

Client Project: Markham Dump

Client Sample ID: MD-Chem-10 Work Order/ID: 11E0515-10

Date:

Thursday, May 26, 2011

 Sample Description:
 Sampled:
 05/06/2011
 10:00

 Matrix:
 Solid
 Received:
 05/13/2011
 10:15

ΑT Result MDL RL Qual Units DF **Analyses** Analyzed Method: 1311/8270C Analyst: BR **TCLP Semivolatile Organic Compounds** Prep Date/Time: 05/18/2011 09:19 1,4-Dichlorobenzene Α ND 0.018 1.0 mg/L 05/20/2011 13:27 2,4,5-Trichlorophenol Α ND 0.030 1.0 20 05/20/2011 13:27 mg/L 2,4,6-Trichlorophenol Α ND 0.018 1.0 mg/L 20 05/20/2011 13:27 0.016 Α ND 1.0 20 05/20/2011 13:27 2,4-Dinitrotoluene mg/L 0.014 Α ND 1.0 20 05/20/2011 13:27 2-Methylphenol mg/L Α ND 0.016 1.0 20 05/20/2011 13:27 3/4-Methylphenol mg/L Α 0.018 1.0 20 Hexachlorobenzene ND mg/L 05/20/2011 13:27 Hexachlorobutadiene Α ND 0.018 1.0 mg/L 20 05/20/2011 13:27 Α ND 0.018 1.0 mg/L 20 05/20/2011 13:27 Hexachloroethane Α ND 0.020 1.0 mg/L 20 05/20/2011 13:27 Nitrobenzene Α ND 0.026 5.0 20 05/20/2011 13:27 Pentachlorophenol mg/L Α 0.066 1.0 20 05/20/2011 13:27 ND mg/L Pyridine 0.028 **Total Cresol** Μ ND 1.0 mg/L 20 05/20/2011 13:27 %REC Surr: 2,4,6-Tribromophenol S 3.24 47.8-138 20 05/20/2011 13:27 DS %REC Surr: 2-Fluorobiphenyl S 3.63 10-110 20 05/20/2011 13:27 DS Surr: 2-Fluorophenol S 4.08 10-110 %REC 20 05/20/2011 13:27 DS 3.84 %REC 20 05/20/2011 13:27 Surr: Nitrobenzene-d5 S 10-110 DS Surr: Phenol-d5 S 4.00 10-60.8 DS %REC 20 05/20/2011 13:27 Surr: Terphenyl-d14 3.94 16.8-110 DS %REC 20 05/20/2011 13:27

			Method: 13	11/8260B			Αı	nalyst: <b>jin</b>
T	CLP VOA Zero Head Extraction						Prep Date	Time: 05/18/2011 08:00
	1,1-Dichloroethene	Α	ND	0.017	0.050	mg/L	10	05/18/2011 16:17
	1,2-Dichloroethane	Α	ND	0.012	0.050	mg/L	10	05/18/2011 16:17

1, 1-Dichiologulene	_ ^	ND	0.017	0.030	IIIg/L	10	03/10/2011 10.17
1,2-Dichloroethane	Α	ND	0.012	0.050	mg/L	10	05/18/2011 16:17
2-Butanone	Α	ND	0.036	0.10	mg/L	10	05/18/2011 16:17
Benzene	Α	ND	0.0080	0.050	mg/L	10	05/18/2011 16:17
Carbon tetrachloride	Α	ND	0.017	0.050	mg/L	10	05/18/2011 16:17
Chlorobenzene	Α	ND	0.0080	0.050	mg/L	10	05/18/2011 16:17
Chloroform	Α	ND	0.0090	0.050	mg/L	10	05/18/2011 16:17
Tetrachloroethene	Α	ND	0.013	0.050	mg/L	10	05/18/2011 16:17
Trichloroethene	Α	ND	0.0090	0.050	mg/L	10	05/18/2011 16:17
Vinyl chloride	Α	ND	0.0090	0.020	mg/L	10	05/18/2011 16:17
1,4-Dichlorobenzene	В	ND	0.0070	0.10	mg/L	10	05/18/2011 16:17
Surr: 1,2-Dichloroethane-d4	S	96.00		74.5-132	%REC	10	05/18/2011 16:17
Surr: 4-Bromofluorobenzene	S	105.00		80-120	%REC	10	05/18/2011 16:17
Surr: Dibromofluoromethane	S	96.30		80-120	%REC	10	05/18/2011 16:17
Surr: Toluene-d8	S	101.00		80-120	%REC	10	05/18/2011 16:17

		Method: 13	11/7470A		Analyst: <b>SA</b>		
TCLP Mercury by CVAA					Prep Date	/Time:05/19/2011 09:10	
Mercury	А	ND	0.00100	mg/L	1	05/20/2011 12:46	



Client: **Environmental Restoration** 

**Client Project:** Markham Dump

Client Sample ID: MD-Chem-10 Work Order/ID: 11E0515-10

05/06/2011 10:00 Sample Description: Sampled:

Matrix: Solid						Receive		05/13/2011 10:0
Analyses	AT	Result	MDL	RL	Qual	Units	DF	Analyzed
		Method: 13	11/6010B					alyst: <b>SA</b>
TCLP Metals by ICP							Prep Date/1	Time: 05/18/2011 09:55
Arsenic	A	ND		0.0100		mg/L	1	05/18/2011 18:56
Barium	Α	ND		0.500		mg/L	1	05/18/2011 18:56
Cadmium	A	ND		0.00200		mg/L	1	05/18/2011 18:56
Chromium	А	ND		0.00300		mg/L	1	05/18/2011 18:56
Lead	Α	ND		0.0500	В	mg/L	1	05/18/2011 18:56
Nickel	Α	0.0162		0.0100		mg/L	1	05/18/2011 18:56
Selenium	А	ND		0.0300		mg/L	1	05/18/2011 18:56
Silver	Α	ND		0.0100		mg/L	1	05/18/2011 18:56
		Method: AS	STM D92-9	0 Modified			Ana	alyst: <b>TMG</b>
gnitability (Open Cup)							Prep Date/1	Time: 05/20/2011 16:14
Ignitability	Α	> 170		30		°F	1	05/20/2011 16:14
		Method: SV	V-846 909	5B			Ana	alyst: ABG
Paint Filter							Prep Date/1	Fime: <b>05/20/2011 14:15</b>
Paint Filter	Α	Pass		0.0		Pass/Fail	1	05/20/2011 15:14
		Method: SV	V-846 904	5C			Ana	alyst: <b>ABG</b>
рН								Fime: 05/20/2011 14:15
pH	Α	10.5		2.00		pH Units	1	05/20/2011 15:11
		Method: SV	V-846 906	6			Ana	alyst: <b>EINIK</b>
Total Phenolics				-				Time: 05/17/2011 11:30
Phenolics, Total Recoverable	Α	ND		0.47		mg/Kg	1	05/18/2011 13:41
		Method: Cr	napter 7/90	014			Ana	alyst: <b>GOEHL</b>
Reactive Cyanide								Time: 05/20/2011 09:15
Reactive Cyanide	Α	ND		10		mg/Kg	1	05/20/2011 14:42
		Method: Cr	napter 7/9	034			Ana	alyst: <b>ABG</b>
Reactive Sulfide								Fime: 05/20/2011 09:15
Reactive Sulfide	А	ND		10	Н	mg/Kg	1	05/20/2011 15:37
				- 1	• •	J J		



#### FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

Not Analyzed NA

mg/L Milligrams per Liter (ppm) mg/Kg Milligrams per Kilogram (ppm)

U Undetected

J Analyte concentration detected between RL and MDL (Metals / Organics)

В Detected in the associated method Blank at a concentration above the routine PQL/RL

D Dilution performed on sample

ND Not Detected at the Reporting Limit (or the Method Detection Limit, if used)

Ε Value above quantitation range

Н Analyte was prepared and/or analyzed outside of the analytical method holding time

Matrix Interference

R RPD outside accepted recovery limits S Spike recovery outside recovery limits

Surrogate Surr DF Dilution Factor Reporting Limit RLMDL Method Detection Limit NR Not Recovered

### **ANALYTE TYPES: (AT)**

Target Analyte A,B =Internal Standard М Summation Analyte

Surrogate

Tentatively Identified Compound (TIC, concentration estimated)

#### **QC SAMPLE IDENTIFICATIONS**

MBLK	=	Method Blank	ICSA	=	Interference Check Standard "A"
DUP	=	Method Duplicate	ICSAB	=	Interference Check Standard "AB"
LCS	=	Laboratory Control Sample	LCSD	=	Laboratory Control Sample Duplicate
BS	=	Method Blank Spike	BSD	=	Method Blank Spike Duplicate
MS	=	Matrix Spike	MSD	=	Matrix Spike Duplicate
ICB	=	Initial Calibration Blank	CCB	=	Continuing Calibration Blank
ICV	=	Initial Calibration Verification	CCV	=	Continuing Calibration Verification
PDS	=	Post Digestion Spike	SD	=	Serial Dilution
000					

OPR Ongoing Precision and Recovery Standard

### **CERTIFICATIONS**

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

The American Association for Laboratory Accreditation [A2LA] for Biological Testing, ISO/IEC 17025 (Certificate# 3045.01)

The American Association for Laboratory Accreditation [A2LA] for Environmental Department of Defense Testing, ISO/IEC 17025 (Certificate# 3045.02)

Illinois EPA for the analysis wastewater and solid waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (accreditation #200064)

Illinois Department of Public Health for the microbiological analysis of drinking water (registry #1755266)

Indiana DEM approved support laboratory for solid waste and wastewater analyses

Indiana SDH for the chemical analysis of drinking water (lab #C-45-03)

Indiana SDH for the microbiological analysis of drinking water (lab #M-45-8)

Kansas Department of Health and Environment for the analysis of drinking water, wastewater, and solid hazardous waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (Certificate No. E-10397)

Kentucky EPPC for the analysis of samples applicable to the Underground Storage Tank program (lab #75)

North Carolina DENR for the environmental analysis for NPDES effluent, surface water, groundwater, and pretreatment regulations(certificate #597)

Wisconsin DNR for the chemical analysis of wastewater and solid waste (lab #998036710)



<b>COOLER INSPEC</b>	CTION			Date:	Thursda	ay, May 26, 20	11
Client Name: Enviror	nmental Restoration		Date/Tin	ne Received:		011 10:15	
Work Order Number:	11E0515		Received	l by: Ken S	Smith		
Checklist completed by	7: 5/13/2011 11:14:00AM	Ken Smith	Reviewe	d by: <u>5/13</u>	/2011	KGF	
		Carrier Name:	- Microbac			-	
	Cooler ID: Default Cooler		Contain	ner/Temp Blar	ık Tempera	ature: 4.00	l°С
Custody seals intact of Custody seals intact of Custody seals intact of COC present? COC included sufficient COC included a sample COC agrees with sample complete the appropriate of COC included date of COC included time of COC included tim	nple labels? propriate matrix? f collection? collection? propriate number of containentainer/bottle? tact? ume for indicated test?	on? ers? s identified?	Yes	No N		Not Present Not Present Not Present	
Samples received on Samples properly pre	inquished and received? ice?	ace?	Yes Yes Yes Yes Yes	No No No No	No	VOA vials sul	bmitted 🗸
	TION (excluding After-Hour I	— — — — — Receint) REOURES	CLIENT NOTIFI	— — — – CATION	_ — —		
	Client Sample ID	Comments	, , , , , , , , , , , , , , , , , , , ,	0.11101.0			
11E0515-01	MD-NHL-1						
11E0515-02	MD-BL-2	İ					
11E0515-03	MD-BG-3						
11E0515-04	MD-AL-4						
11E0515-05	MD-INK-5						
11E0515-06	MD-INK-6						
11E0515-07	MD-BS-7						
	MD-OXS-8	İ					
	MD-BAG-9	İ					
11E0515-10	MD-Chem-10	†					

	Page of Prepared by VEHWS	CoCode (lab use only) Template/Prelogin Shipped Via;		000 COV	000		Other  Other  Condition (lab use only)  Saived:  PH Checked NCF:
	Analysis/Container/Preservative	Leach	14.5	ZX X	×× × × ×		Flow Elow Courier UP
Chicaton	Analysis Con i us but state sem i us la trico	4501-1 +10 -0771	X) X.	X	X		Samples returned via:    Samples returned via:   Fed Ex
	15HWELLON ILL Project Name: Mar Kham ILL Project Name:	Email? No Yes of Fax? No Yes Containers	Date Time 1				DW - Drinking Water attrice) hature)  v. (Signodure)
Alternate billing information:	Report to: ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (	ab MUST Be Notified) Same Day Next Day Two Day	x* Depth	5 X X = X = X	0 ~ ~ ~ %		GW - Groundwater  Date: Time Received by: Signature,  Date: Time: Received by: Signature,  S. / 3. / 0.1/5  Date: Time: Received by: (Signature,
	ENVIRONMENTAL  RESTORATIONLLC  1666 Fabick Drive Fenton, MO 63022  (636) 227-7477  Fax (636) 227-6447  Fax (636) 237-747  Fax (6	V. C. H. C.	Sample ID	MD-66-3 MD-86-3 MD-81-3	MD-65-7 MD-0x5-7 MD-0x5-9 MD-646-9		Remarks: Rem



Work Order No.: 11D0874

April 30, 2011

Environmental Restoration 16660 South Canal Street South Holland, IL 60437-

Re: Markham, IL

Dear Toby Viehweg:

Microbac Laboratories, Inc. - Chicagoland Division received 34 sample(s) on 4/21/2011 2:45:00PM for the analyses presented in the following report as Work Order 11D0874.

The enclosed results were obtained from and are applicable to the sample(s) as received at the laboratory. All sample results are reported on an "as received" basis unless otherwise noted.

All data included in this report have been reviewed and meet the applicable project specific and certification specific requirements, unless otherwise noted. A qualifications page is included in this report and lists the programs under which Microbac maintains certification.

This report has been paginated in its entirety and shall not be reproduced except in full, without the written approval of Microbac Laboratories.

We appreciate the opportunity to service your analytical needs. If you have any questions, please contact your project manager. For any feedback, please contact Jeff Loewe, Division Manager at jeff.loewe@microbac.com. You may also contact Sean Hyde, Chief Operating Officer at sean.hyde@microbac.com or James Nokes, President at james.nokes@microbac.com.

H. Falmer

Sincerely,

Kevin Falvey Account Manager



Date:

### **WORK ORDER SAMPLE SUMMARY**

Client: Environmental Restoration

**Project:** Markham, IL **Lab Order:** 11D0874

Lab Order. 1150074											
Lab Sample ID	Client Sample ID	Tag Number	<b>Collection Date</b>	Date Received							
11D0874-01	MDC-YD		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-02	MDC-YD		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-03	MDC FF2 5		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-04	MDC-FF2 5		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-05	MDC FF2 10		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-06	MDC-FF2 10		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-07	MDC FF2 15		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-08	MDC-FF2 15		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-09	MDC FF2 20		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-10	MDC-FF2 20		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-11	MDC FF1 5		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-12	MDC-FF1 5		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-13	MDC FF1 10		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-14	MDC-FF1 10		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-15	MDC FF1 15		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-16	MDC-FF1 15		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-17	MDC FF1 20		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-18	MDC-FF1 20		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-19	MDC EMC 5		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-20	MDC-EMC 5		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-21	MDC EMC 10		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-22	MDC-EMC 10		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-23	MDC EMC 15		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-24	MDC-EMC 15		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-25	MDC-EMC 20		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-26	MDC-EMC 20		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-27	MDC-901 5		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-28	MDC-901 5		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-29	MDC-901 10		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-30	MDC-901 10		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-31	MDC-901 15		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-32	MDC-901 15		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-33	MDC-901 20		04/20/2011 11:00	4/21/2011 2:45:00PM							
11D0874-34	MDC-901 20		04/20/2011 11:00	4/21/2011 2:45:00PM							

Saturday, April 30, 2011



CASE NARRATIVE Date: Saturday, April 30, 2011

Client: Environmental Restoration

**Project:** Markham, IL **Lab Order:** 11D0874

B - the Method Blank associated with the samples contained Chromium and Lead at a level above the reporting limit. This is considered insignificant, as the concentration in the samples was more than ten-times that measured in the blank.

The Matrix Spike and Matrix Spike Duplicate performed on the MDC-YD sample failed the accuracy criteria for, both, soluble and insoluble forms of Hexavalent Chromium. This bias is due to the high indigenous analyte concentration (relative to the spike amount).



Analytical Results Date: Saturday, April 30, 2011

Client: Environmental Restoration

Client Project: Markham, IL

Chromium, Hexavalent

Client Sample ID: MDC-YD Work Order/ID: 11D0874-01

Sample Description: Sampled: 04/20/2011 11:00

Matrix: Solid Received: 04/21/2011 14:45

Analyses	·	AT	Result	RL	-	Qual	Units	DF	Analyzed		
		Method: SW-846 6010B						Ar	Analyst: <b>SA</b>		
<b>Total Met</b>	als by ICP	Р	Prep Method: SW846 3050B					Prep Date/Time: 04/25/2011 10:55			
Chromi	um	А	9000		1.4	В	mg/Kg	10	04/27/2011 21:36		
Lead		A	34000		3.5	В	mg/Kg	10	04/27/2011 21:36		
Method: SW-846 7196A Analyst: GOEHL								alyst: GOEHL			
Hexavale	nt Chromium	Р	Prep Method: SW846 3060A					Prep Date/Time: 04/28/2011 15:39			

80

В

mg/Kg

200

04/29/2011 15:07

A **2800** 



Analytical Results Date: Saturday, April 30, 2011

Client: Environmental Restoration

Client Project: Markham, IL

Client Sample ID: MDC-YD Work Order/ID: 11D0874-02

 Sample Description:
 Sampled:
 04/20/2011 11:00

Matrix: Solid Received: 04/21/2011 14:45

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed	
Method: 1311/6010B						Analyst: <b>SA</b>			
TCLP Metals by ICP		Р	rep Method:/SW846 30	010A	Prep Date/Time: 04/25/2011 09:07				
	Chromium	Α	1.19	0.00300			1	04/25/2011 14:15	
	Lead	Α	7.00	0.00750			1	04/25/2011 14:15	



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC FF2 5
 Work Order/ID:
 11D0874-03

Sample Description: Sampled: 04/20/2011 11:00

Α	nalyses	ΑT	Result	RL	Qua	l Units	DF	Analyzed	
Method: <b>SW-846 6010B</b>							An	alyst: <b>SA</b>	
Total Metals by ICP		Prep Method: SW846 3050B					Prep Date/Time: 04/25/2011 10:55		
	Chromium	Α	8600	1	.5 B	mg/Kg	10	04/27/2011 21:52	
	Lead	Α	35000	3	.8 B	mg/Kg	10	04/27/2011 21:52	



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-FF2 5
 Work Order/ID:
 11D0874-04

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑТ	Result	RL	Qual	Units	DF	Analyzed			
		Method: 1311/6010B					Analyst: <b>SA</b>				
TCLP Metals by ICP		Prep Method: /SW846 3010A				Prep Date/Time: 04/25/2011 10:11					
	Chromium	Α	5.28	0.00300			1	04/27/2011 18:59			
	Lead	Α	24.8	0.00750			1	04/27/2011 18:59			



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC FF2 10
 Work Order/ID:
 11D0874-05

Sample Description: Sampled: 04/20/2011 11:00

 Matrix:
 Solid
 Received:
 04/21/2011
 14:45

Aı	nalyses	ΑT	Result	RL	Qu	al Units	DF	Analyzed		
		Method: SW-846 6010B					Analyst: <b>SA</b>			
To	tal Metals by ICP	Р	rep Method: SW846 30	50B			Prep Date/	Time: 04/25/2011 10:55		
	Chromium	Α	8400		1.5 B	mg/Kg	10	04/27/2011 21:57		
	Lead	Α	34000	;	3.7 B	mg/Kg	10	04/27/2011 21:57		



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-FF2 10
 Work Order/ID:
 11D0874-06

 Sample Description:
 Sampled:
 04/20/2011 11:00

Α	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed	
Method: 1311/6010B							An	alyst: <b>SA</b>	
TCLP Metals by ICP		Prep Method:/SW846 3010A				Prep Date/Time: 04/25/2011 10:11			
	Chromium	Α	2.90	0.00300			1	04/27/2011 19:15	
	Lead	Α	16.5	0.00750			1	04/27/2011 19:15	



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC FF2 15
 Work Order/ID:
 11D0874-07

Sample Description: Sampled: 04/20/2011 11:00

Α	nalyses	ΑT	Result	RL	Qua	al Units	DF	Analyzed	
Method: <b>SW-846 6010B</b>							An	alyst: <b>SA</b>	
Total Metals by ICP		Prep Method: SW846 3050B					Prep Date/Time: 04/25/2011 10:55		
	Chromium	Α	7300	1	.5 B	mg/Kg	10	04/27/2011 22:03	
	Lead	Α	30000	3	8.6 B	mg/Kg	10	04/27/2011 22:03	



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-FF2 15
 Work Order/ID:
 11D0874-08

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed			
		Method: 1311/6010B					Analyst: <b>SA</b>				
TCLP Metals by ICP			Prep Method: /SW846 3010A				Prep Date/Time: 04/25/2011 10:11				
	Chromium	Α	2.42	0.00300			1	04/27/2011 19:21			
	Lead	Α	0.0813	0.00750			1	04/27/2011 19:21			



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC FF2 20
 Work Order/ID:
 11D0874-09

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qua	l Units	DF	Analyzed
	Method: SW-846 6010B						An	alyst: <b>SA</b>
Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 04/25/2011 10:55		
	Chromium	Α	6300	1	.4 B	mg/Kg	10	04/27/2011 22:08
	Lead	Α	25000	3	3.6 B	mg/Kg	10	04/27/2011 22:08



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-FF2 20
 Work Order/ID:
 11D0874-10

 Sample Description:
 Sampled:
 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed			
		Method: 1311/6010B					Analyst: <b>SA</b>				
TCLP Metals by ICP			Prep Method:/SW846 3010A				Prep Date/Time: 04/25/2011 10:11				
	Chromium	Α	36.3	0.00300			1	04/27/2011 19:26			
	Lead	Α	ND	0.00750			1	04/27/2011 19:26			



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC FF1 5
 Work Order/ID:
 11D0874-11

Sample Description: Sampled: 04/20/2011 11:00

Aı	nalyses	ΑT	Result	RL	C	<b>Qual</b>	Units	DF	Analyzed
		Method: SW-846 6010B				Analyst: <b>SA</b>			
To	otal Metals by ICP	Prep Method: SW846 3050B				Prep Date/Time: 04/25/2011 10:55			
	Chromium	Α	6100		1.4	В	mg/Kg	10	04/27/2011 22:14
	Lead	Α	24000	;	3.6	В	mg/Kg	10	04/27/2011 22:14



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-FF1 5
 Work Order/ID:
 11D0874-12

 Sample Description:
 Sampled:
 04/20/2011 11:00

Α	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed				
		Method: 1311/6010B						Analyst: <b>SA</b>				
TCLP Metals by ICP		Р	rep Method:/SW846 3	010A	Prep Date/Time: 04/25/2011 10:1							
	Chromium	Α	6.50	0.00300			1	04/27/2011 19:32				
	Lead	Α	4.34	0.00750			1	04/27/2011 19:32				



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC FF1 10
 Work Order/ID:
 11D0874-13

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Q	ual	Units	DF	Analyzed	
	Method: SW-846 6010B					Analyst: <b>SA</b>				
To	otal Metals by ICP	Prep Method: SW846 3050B					Prep Date/Time: 04/25/2011 10:55			
	Chromium	Α	6800	•	1.5	В	mg/Kg	10	04/27/2011 22:19	
	Lead	Α	28000	;	3.7	В	mg/Kg	10	04/27/2011 22:19	



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-FF1 10
 Work Order/ID:
 11D0874-14

 Sample Description:
 Sampled:
 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed				
		Method: 1311/6010B						Analyst: <b>SA</b>				
TCLP Metals by ICP		Р	rep Method:/SW846 30	010A	Prep Date/Time: 04/25/2011 10:11							
	Chromium	Α	6.34	0.00300			1	04/27/2011 19:37				
	Lead	Α	2.33	0.00750			1	04/27/2011 19:37				



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC FF1 15
 Work Order/ID:
 11D0874-15

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qua	Units	DF	Analyzed	
	Method: SW-846 6010B						An	alyst: <b>SA</b>	
To	Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 04/25/2011 10:55		
	Chromium	Α	8000	1	.5 B	mg/Kg	10	04/27/2011 22:46	
	Lead	Α	33000	3	.8 B	mg/Kg	10	04/27/2011 22:46	



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-FF1 15
 Work Order/ID:
 11D0874-16

Sample Description: Sampled: 04/20/2011 11:00

Α	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed
	Method: 1311/6010B						An	alyst: <b>SA</b>
TCLP Metals by ICP		Р	rep Method:/SW846 30	010A	Prep Date/Time: 04/25/2011 10:11			
	Chromium	Α	9.20	0.00300			1	04/27/2011 19:43
	Lead	Α	0.130	0.00750			1	04/27/2011 19:43



Client: Environmental Restoration

Client Project: Markham, IL

Client Sample ID: MDC FF1 20 Work Order/ID: 11D0874-17

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qua	I Units	DF	Analyzed
	Method: <b>SW-846 6010B</b>						An	alyst: <b>SA</b>
Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 04/25/2011 10:55		
	Chromium	Α	6400	1	.5 B	mg/Kg	10	04/27/2011 22:52
	Lead	Α	26000	3	.7 B	mg/Kg	10	04/27/2011 22:52



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-FF1 20
 Work Order/ID:
 11D0874-18

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed
	Method: 1311/6010B						Ar	alyst: <b>SA</b>
TCLP Metals by ICP		Р	rep Method:/SW846 30	010A	Prep Date/Time: 04/25/2011 10:11			
	Chromium	Α	9.68	0.00300			1	04/27/2011 20:10
	Lead	Α	0.0419	0.00750			1	04/27/2011 20:10



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC EMC 5
 Work Order/ID:
 11D0874-19

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qı	ual Unit	s DF	Analyzed	
			Method: SW-846 6	010B			Α	nalyst: <b>SA</b>	
To	Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 04/25/2011 10:55		
	Chromium	Α	7100	1	1.3	3 mg/Kg	10	04/27/2011 22:57	
	Lead	А	28000	3	3.3	3 mg/Kg	10	04/27/2011 22:57	



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-EMC 5
 Work Order/ID:
 11D0874-20

 Sample Description:
 Sampled:
 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed	
	Method: 1311/6010B						An	alyst: <b>SA</b>	
TCLP Metals by ICP		Prep Method:/SW846 3010A				Prep Date/Time: 04/25/2011 10:11			
	Chromium	Α	1.66	0.00300			1	04/27/2011 20:15	
	Lead	Α	1.04	0.00750			1	04/27/2011 20:15	



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC EMC 10
 Work Order/ID:
 11D0874-21

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qua	l Units	DF	Analyzed	
	Method: <b>SW-846 6010B</b>						An	alyst: <b>SA</b>	
To	Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 04/25/2011 10:55		
	Chromium	Α	9100	1	.5 B	mg/Kg	10	04/27/2011 23:02	
	Lead	Α	37000	3	.8 B	mg/Kg	10	04/27/2011 23:02	



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-EMC 10
 Work Order/ID:
 11D0874-22

 Sample Description:
 Sampled:
 04/20/2011 11:00

Α	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed	
	Method: 1311/6010B						An	alyst: <b>SA</b>	
TCLP Metals by ICP		Prep Method:/SW846 3010A				Prep Date/Time: 04/25/2011 10:11			
	Chromium	Α	7.30	0.00300			1	04/27/2011 20:20	
	Lead	Α	0.0200	0.00750			1	04/27/2011 20:20	



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC EMC 15
 Work Order/ID:
 11D0874-23

 Sample Description:
 Sampled:
 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed	
	Method: <b>SW-846 6010B</b>						An	alyst: <b>SA</b>	
To	Total Metals by ICP		Prep Method: SW846 3050B				Prep Date/Time: 04/25/2011 10:55		
	Chromium	Α	6700	1	5 B	mg/Kg	10	04/27/2011 23:08	
	Lead	Α	27000	3	8 B	mg/Kg	10	04/27/2011 23:08	



Client: Environmental Restoration

Client Project: Markham, IL

Client Sample ID: MDC-EMC 15 Work Order/ID: 11D0874-24

 Sample Description:
 Sampled:
 04/20/2011 11:00

Α	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed		
	Method: 1311/6010B						Analyst: <b>SA</b>			
TCLP Metals by ICP		Prep Method:/SW846 3010A				Prep Date/Time: 04/25/2011 10:11				
	Chromium	Α	14.5	0.00300			1	04/27/2011 20:26		
	Lead	Α	0.00900	0.00750			1	04/27/2011 20:26		



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-EMC 20
 Work Order/ID:
 11D0874-25

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qua	l Units	DF	Analyzed	
	Method: SW-846 6010B						An	nalyst:SA	
Total Metals by ICP		Prep Method: SW846 3050B					Prep Date/Time: 04/25/2011 10:55		
	Chromium	Α	6400	1	.5 B	mg/Kg	10	04/27/2011 23:13	
	Lead	Α	26000	3	.7 B	mg/Kg	10	04/27/2011 23:13	



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-EMC 20
 Work Order/ID:
 11D0874-26

 Sample Description:
 Sampled:
 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed	
	Method: 1311/6010B						Ar	alyst: <b>SA</b>	
TCLP Metals by ICP		Prep Method:/SW846 3010A				Prep Date/Time: 04/25/2011 10:11			
	Chromium	Α	17.5	0.00300			1	04/27/2011 20:31	
	Lead	Α	0.00500	0.00750			1	04/27/2011 20:31	



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-901 5

 Work Order/ID:
 11D0874-27

 Sample Description:
 Sampled:
 04/20/2011 11:00

Α	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed
			Method: SW-846 60	010B			An	alyst: <b>SA</b>
To	otal Metals by ICP	Р	rep Method: SW846 30	50B			Prep Date/	Time: 04/25/2011 10:55
	Chromium	Α	7600	1	3 B	mg/Kg	10	04/27/2011 23:18
	Lead	Α	31000	3	3 B	mg/Kg	10	04/27/2011 23:18



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-901 5
 Work Order/ID:
 11D0874-28

 Sample Description:
 Sampled:
 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed
			Method: 1311/6010	В			An	alyst: <b>SA</b>
T	CLP Metals by ICP	Р	rep Method:/SW846 30	010A		Pi	ep Date/	Time: 04/25/2011 10:11
	Chromium	Α	4.35	0.00300			1	04/27/2011 20:36
	Lead	Α	1.72	0.00750			1	04/27/2011 20:36



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-901 10
 Work Order/ID:
 11D0874-29

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qua	l Units	DF	Analyzed
			Method: SW-846 60	)10B			An	alyst: <b>SA</b>
To	otal Metals by ICP	Р	rep Method: SW846 30	50B			Prep Date/	Time: 04/25/2011 10:55
	Chromium	Α	7500	1	.4 B	mg/Kg	10	04/27/2011 23:24
	Lead	Α	30000	3	3.5 B	mg/Kg	10	04/27/2011 23:24



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-901 10
 Work Order/ID:
 11D0874-30

 Sample Description:
 Sampled:
 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed
			Method: 1311/6010	В			Ar	alyst: <b>SA</b>
T	CLP Metals by ICP	Р	rep Method:/SW846 30	010A		Р	rep Date/	Time: 04/25/2011 10:11
	Chromium	Α	3.14	0.00300			1	04/27/2011 20:42
	Lead	Α	0.0624	0.00750			1	04/27/2011 20:42



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-901 15
 Work Order/ID:
 11D0874-31

Sample Description: Sampled: 04/20/2011 11:00

Ana	alyses	ΑT	Result	RL	Qua	Units	DF	Analyzed
			Method: SW-846 60	10B			An	alyst: <b>SA</b>
Tot	al Metals by ICP	Р	rep Method: SW846 30	50B		I	Prep Date/	Time: 04/25/2011 10:55
- 0	Chromium	Α	6700	1	.4 B	mg/Kg	10	04/27/2011 23:29
	Lead	Α	28000	3	.6 B	mg/Kg	10	04/27/2011 23:29



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-901 15
 Work Order/ID:
 11D0874-32

 Sample Description:
 Sampled:
 04/20/2011 11:00

Α	nalyses	ΑT	Result	RL	Qual	Units	DF	Analyzed
			Method: 1311/6010	В			An	alyst: <b>SA</b>
T	CLP Metals by ICP	Р	rep Method:/SW846 3	010A		Pr	ep Date/	Time: 04/25/2011 10:11
	Chromium	Α	2.58	0.00300			1	04/27/2011 20:47
	Lead	Α	0.00280	0.00750			1	04/27/2011 20:47



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-901 20
 Work Order/ID:
 11D0874-33

Sample Description: Sampled: 04/20/2011 11:00

A	nalyses	ΑT	Result	RL	Qua	l Units	DF	Analyzed
			Method: SW-846 60	)10B			An	alyst: <b>SA</b>
To	otal Metals by ICP	Р	rep Method: SW846 30	50B			Prep Date/	Time: 04/25/2011 10:55
	Chromium	Α	6500	1	.5 B	mg/Kg	10	04/27/2011 23:35
	Lead	Α	26000	3	.7 B	mg/Kg	10	04/27/2011 23:35



Client: Environmental Restoration

Client Project: Markham, IL

 Client Sample ID:
 MDC-901 20
 Work Order/ID:
 11D0874-34

Sample Description: Sampled: 04/20/2011 11:00

Analyses	AT	Result	RL	Qual	Units	DF	Analyzed
		Method: 1311/60	010B			An	alyst: <b>SA</b>
TCLP Metals by ICP	P	rep Method:/SW84	6 3010A		Р	rep Date/	Time: 04/25/2011 10:11
Chromium	Α	2.16	0.00300			1	04/27/2011 20:52
Lead	А	0.00970	0.00750			1	04/27/2011 20:52



#### FLAGS, FOOTNOTES AND ABBREVIATIONS (as needed)

NA Not Analyzed

mg/L Milligrams per Liter (ppm) mg/Kg Milligrams per Kilogram (ppm)

U Undetected

J Analyte concentration detected between RL and MDL (Metals / Organics)

В Detected in the associated method Blank at a concentration above the routine PQL/RL

D Dilution performed on sample

ND Not Detected at the Reporting Limit (or the Method Detection Limit, if used)

Ε Value above quantitation range

Н Analyte was prepared and/or analyzed outside of the analytical method holding time

Matrix Interference

R RPD outside accepted recovery limits S Spike recovery outside recovery limits

Surrogate Surr DF Dilution Factor Reporting Limit RL MDL Method Detection Limit NR Not Recovered

## **ANALYTE TYPES: (AT)**

A,B =Target Analyte Internal Standard М Summation Analyte

Surrogate

Tentatively Identified Compound (TIC, concentration estimated)

### QC SAMPLE IDENTIFICATIONS

MBLK	=	Method Blank	ICSA	=	Interference Check Standard "A"
DUP	=	Method Duplicate	ICSAB	=	Interference Check Standard "AB"
LCS	=	Laboratory Control Sample	LCSD	=	Laboratory Control Sample Duplicate
BS	=	Method Blank Spike	BSD	=	Method Blank Spike Duplicate
MS	=	Matrix Spike	MSD	=	Matrix Spike Duplicate
ICB	=	Initial Calibration Blank	CCB	=	Continuing Calibration Blank
ICV	=	Initial Calibration Verification	CCV	=	Continuing Calibration Verification
PDS	=	Post Digestion Spike	SD	=	Serial Dilution
000		0 . 0	and the second		

OPR Ongoing Precision and Recovery Standard

## CERTIFICATIONS

Below is a list of certifications maintained by the Microbac Merrillville Laboratory. All data included in this report has been reviewed for and meets all project specific and quality control requirements of the applicable accreditation, unless otherwise noted. Complete lists of individual analytes pursuant to each certification below are available upon request.

The American Association for Laboratory Accreditation [A2LA] for Biological Testing, ISO/IEC 17025 (Certificate# 3045.01)

The American Association for Laboratory Accreditation [A2LA] for Environmental Department of Defense Testing, ISO/IEC 17025 (Certificate# 3045.02)

Illinois EPA for the analysis wastewater and solid waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (accreditation #200064)

Illinois Department of Public Health for the microbiological analysis of drinking water (registry #1755266)

Indiana DEM approved support laboratory for solid waste and wastewater analyses

Indiana SDH for the chemical analysis of drinking water (lab #C-45-03)

Indiana SDH for the microbiological analysis of drinking water (lab #M-45-8)

Kansas Department of Health and Environment for the analysis of drinking water, wastewater, and solid hazardous waste in accordance with the requirements of the National Environmental Laboratory Accreditation Program [NELAP] (Certificate No. E-10397)

Kentucky EPPC for the analysis of samples applicable to the Underground Storage Tank program (lab #75)

North Carolina DENR for the environmental analysis for NPDES effluent, surface water, groundwater, and pretreatment regulations(certificate #597)

Wisconsin DNR for the chemical analysis of wastewater and solid waste (lab #998036710)



Saturday, April 30, 2011

# **COOLER INSPECTION**

Client Name: Environme	ental Restoration		Date/Time F	Received: 04/21	1/2011 14:45	
Work Order Number:	11D0874		Received by	: Ken Smith		
Checklist completed by:	4/22/2011 9:14:00AM	Ken Smith	Reviewed by	y: <u>4/22/2011</u>	KGF	
		Carrier Name:	Microbac			
Co	ooler ID: Default Cooler		Container	Temp Blank Temp	perature: 5.00°C	
Custody seals intact on COC present? COC included sufficient COC included a sample COC agrees with sample COC identified the approach COC included date of coc COC included time of coc COC identified the approach in proper contact Samples in proper contact Sample containers intact Sufficient sample volume All samples received with	shipping container/cooler? sample containers?  client identification? sample collector informatio description? e labels? opriate matrix? ollection? ollection? opriate number of container siner/bottle? t? e for indicated test?	s? identified?	Yes       ✓         Yes       ✓         Yes       ✓         Yes       ✓         Yes       ✓         Yes       ✓         Yes       ✓         Yes       ✓         Yes       ✓         Yes       ✓         Yes       ✓         Yes       ✓         Yes       ✓         Yes       ✓         Yes       ✓         Yes       ✓         Yes       ✓         Yes       ✓	No	Not Present Not Present Not Present V	
COC included the reque COC signed when relind Samples received on ice Samples properly prese Voa vials for aqueous sa Cooler Comments:	uished and received? e?	ce?	Yes Yes Yes Yes Yes Yes Yes	No No No No No	No VOA vials submitted	<b>✓</b>

 $ANY \ "NO" \ EVALUATION \ (excluding \ After-Hour \ Receipt) \ REQUIRES \ CLIENT \ NOTIFICATION.$ 



Sample ID	Client Sample ID	Comments
11D0874-01	MDC-YD	
11D0874-02	MDC-YD	
11D0874-03	MDC FF2 5	
11D0874-04	MDC-FF2 5	
11D0874-05	MDC FF2 10	
11D0874-06	MDC-FF2 10	
11D0874-07	MDC FF2 15	
11D0874-08	MDC-FF2 15	
11D0874-09	MDC FF2 20	
11D0874-10	MDC-FF2 20	
11D0874-11	MDC FF1 5	
11D0874-12	MDC-FF1 5	
11D0874-13	MDC FF1 10	
11D0874-14	MDC-FF1 10	
11D0874-15	MDC FF1 15	
11D0874-16	MDC-FF1 15	
11D0874-17	MDC FF1 20	
11D0874-18	MDC-FF1 20	
11D0874-19	MDC EMC 5	
11D0874-20	MDC-EMC 5	
11D0874-21	MDC EMC 10	
11D0874-22	MDC-EMC 10	
11D0874-23	MDC EMC 15	
11D0874-24	MDC-EMC 15	
11D0874-25	MDC-EMC 20	
11D0874-26	MDC-EMC 20	
11D0874-27	MDC-901 5	
11D0874-28	MDC-901 5	
11D0874-29	MDC-901 10	
11D0874-30	MDC-901 10	
11D0874-31	MDC-901 15	
11D0874-32	MDC-901 15	
11D0874-33	MDC-901 20	
11D0874-34	MDC-901 20	

of Custody	Pageof_APrepared by:	CoCode (lab use only)	Template/Prelogin Shipped Via:	Remarks/Containment Sample # (lab only)	03	05,06		0/20		91 (51		20,72	122	***************************************	Temp Other	Condition (lab use only)	nd Charled INCE	phi checked inch.
er/Preservative															Hd III		Courier Bottles Received:	Hine.
Analysis/Container/Preservative	bos) Losy Domontstro	of Chrome,  Aexa val	99 1721 49	X	义义	义人	X X	\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \	<b>ス</b> メ	X X X	\ \ \ \ \	X	<b>(</b> )		<b>Leps</b>	Samples returned via:	Fed Ex Temp:	המוט.
	Selle, con	) No.	of Ontainers	Time O											DW - Drinking Water OT - Other	S		
	× V154W8	red: May 1C hawn Project Name: P.O. #: Date Results Needed	Email? N	Uate C-SC-1											WW - WasteWater DW	ved by- eggnature)	Repeived by: (Signature) Received for lab hv. (Signature)	ied for tay by, torgrammy
	6 6 6 7 7 Report to: Email to: Chiral	Collected: SEPAP #: (Lab MUST Be Notified)	>	Matrix* Depth												Time: Recei		MC-ONE
	RESTORATIONLC 1666 Fabick Drive Fenton, MO 63026 (636) 227-7477 Fax (636) 227-6447	Client: $\mathcal{MSE}$ Site/Facility ID #:  Rush (Lab MI		Comp/Grab											GW - Groundwater	Date:	Date:	
TIL ER	DU874 Kevin Faivey R - South Holland	aription:  ne: 312446 6725 63680 3476 ected by: McH. W.C.	N 90 loe N 21/2011	MDC-YD	MDC FF25		MDC PC2 (5	Z t		MVC 777.5 MOL 777.13			MOC SMC10		*Matrix SS - Soil/Solid Remarks: ,	Religionarished by (Signature)	Remarked M. (Signature)  Religiously of Signature)  Religiously of Signature)	(

30 12 (lab use only) Sample # (lab only) 34 33, Condition (lab use only) ō N Chain of Custody Prepared by: 16 # 11 CE pH Checked NCF: Page 2 Remarks/Containment 4180 all Temp Other Template/Prelogin Shipped Via: CoCode UPS Bottles Received: Flow Hd Time: Analysis/Container/Preservative Courier Samples returned via: Fed Ex Temp: Date: 2 J OT - Other Containers So. ō t, Vil #Wife Q erlleion DW - Drinking Water Yes XYes Time May E ham 0011 してなながら Date Results Needed: S N 2 Received for lab by. (Signature) Project Name: するが Date Email? P.O. #: Fax? WW - WasteWater Alternate billing information: 200 City/State Collected: Depth Report to: 🧪 (Lab MUST Be Notified) Same Day Next Day Time: Email to: Two Day Matrix\* 40350 1666 Fabick Drive Fenton, MO 63026 (636) 227-7477 Fax (636) 227-6447 Date: GW - Groundwater 4 . H. !! ENVIRONMENTAL RESTORATION LO Comp/Grab Site/Facility ID #: Client: Rush SS - Soil/Solid 6366000 JUD が开びが 8 Phone: 3124466325 Reliequished by: (Signature) MDC golds MDC 4015 MOC GOLLD Collected by (signature): MDC GOLS z Sample ID Collected by: Packed on Ice Remarks: \*Matrix Description: Fax: